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SAVERY COAL

Environmental Impact Statement

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SAVERY PROJECT PREFERENCE RIGHT COAL LEASE APPLICATIONS

FINAL

ENVIRONMENTAL IMPACT STATEMENT

CARBON COUNTY, STATE OF WYOMING
MOFFAT AND ROUTT COUNTIES, STATE OF COLORADO

Prepared By:

U.S. DEPARTMENT OF THE INTERIOR

BUREAU OF LAND MANAGEMENT

RAWLINS DISTRICT 1983

and

U.S. GEOLOGICAL SURVEY

WATER RESOURCES DIVISION

CHEYENNE DISTRICT 1983

Cooperating Agencies:

U.S. DEPARTMENT OF THE INTERIOR

OFFICE OF SURFACE MINING

U.S. DEPARTMENT OF AGRICULTURE

U.S. FOREST SERVICE

Maxwell T. Lieurance
STATE DIRECTOR
WYOMING STATE OFFICE

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STATE DIRECTOR
COLORADO STATE OFFICE

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UNITED STATES DEPARTMENT OF THE INTERIOR
Bureau of Land Management
Wyoming State Office
2515 Warren Ave.
Cheyenne, Wyoming 82001
and
Colorado State Office
1037 20th St.
Denver, Colorado 80202

This is the final environmental impact statement (EIS) on the proposed Savery Preference Right (coal) Lease Application (PRLA) project of the Pittsburg and Midway Coal Mining Company (wholly owned subsidiary of Gulf Oil Corp.). This EIS is based on the applicant's initial showing and the site-specific environmental report (BLM 1982) for the proposed project and the Divide/Overland Coal Land Use Decisions (BLM 1982) and substantive public comments received on the draft EIS pertaining to the Savery PRLA project area (BLM 1982).

The final EIS is not a decision document. The analysis and public comments in the EIS will provide a basis for subsequent decisions on these PRLAs. No decisions can be made for thirty (30) days following release of the final EIS to the public. A record of decision outlining the decision and rationale will be prepared and made available subsequent to the waiting period.

Two existing factors are very relevant to further actions to be taken on the Savery PRLAs and to their final disposition:

1. The federal coal regulations [43 CFR 3430.3-1(a)] mandate that all outstanding PRLAs must be processed by December 1, 1984. This EIS and the above mentioned actions supporting it have been major components of the PRLA processing. The next step in processing involves identifying necessary mitigation of the proposed project, if a federal coal lease were to be issued and the federal coal were to be developed in the Savery PRLA areas. The mitigation requirements that have been identified as a result of all the aforementioned processing steps are attached.

   Because of the mandate to process PRLAs, further consideration of issuing a federal coal lease on the Savery PRLA areas will continue. Simply stated, this consideration is a matter of completing the processing requirements to determine the applicant's "entitlement" to a federal coal lease on the PRLA areas as follows:

   a. After this final EIS has been available for public review for at least 30 days, BLM and the U.S. Forest Service (USFS) will prepare decision records, including mitigation requirements and lease stipulations for those federal coal lands under their respective management jurisdiction. These mitigation requirements and lease stipulations will be based on the EIS and all information developed prior to this EIS.

b. From the decision records, BLM will prepare a lease proposal, including the necessary stipulations and mitigation requirements to be submitted with a request for final showing to the applicant.

c. The applicant's final showing is to be based on the lease proposal and will attempt to show that the stipulations and mitigation requriements can be adequately met and that commerical quantities of coal can be economically produced.

d. BLM will evaluate the final showing. If the applicant is successful in meeting the requirements, he would be entitled to a coal lease. If he fails to meet the requirements, his application(s) would be rejected and a coal lease(s) would not be issued.

It should be understood that where another surface management agency is involved (the USFS in this case), they are a party in determining the adequacy of the final showing in meeting the stipulations and mitigation requirements of the lease proposal on the lands they administer. Also, where lands administered by a federal agency outside the Department of Interior are involved (the USFS in this case), that agency's consent must be obtained before BLM may actually issue a coal lease on those lands (43 CFR 3400.3-1).

e. Some of the mitigation requirements would not be fully developed until a specific mine plan would be submitted to the Office of Surface Mining (OSM) and the states of Wyoming and Colorado. These requirements are identified as studies or site-specific plans to be completed by the lessee, which would be used to develop mitigation measures subject to approval by the OSM, the states, or BLM (depending on jurisdiction). The applicant will submit an estimate of the costs of these studies to be considered when BLM evaluates the final showing. However, the specific mitigation measures that may be required as a result of these studies are not identifiable until those studies are completed and the appropriate agency or state makes its final determinations. Therefore, these costs will not be considered when BLM evaluates the final showing.

Where practicable, the applicant will provide specific mitigation measures and their related costs in the final showing.

For example, in cases where the applicant has sufficient available information to locate surface disturbing activities and the location of those activities is protected by a mitigation measure, the applicant will indicate the costs of applying that mitigation measure to that specific area. BLM will then use those costs in the evaluation of the final showing.

2. One of the Divide/Overland Coal Land Use Planning Decisions (BLM 1982) provides that "...should the processing of the Savery PRLAs result in a determination that the applicant is entitled to a federal coal lease on the area, BLM will pursue the possibilities of negotiating an exchange, or whatever other remedies available, to remove the encumberance of the preference right lease to the area." This provision is further supported and substantiated by the analysis in this EIS and has resulted in BLM's preferred alternative being the no (coal) development alternative for the Savery PRLA project.

MITIGATION REQUIREMENTS
FOR
PREFERENCE RIGHT COAL LEASE APPLICATIONS:

SAVERY PROJECT--APPLICATION NUMERS W-0324034, W-0324035, W-0324036, W-0324038, W-0324041, W-0324042, C-3605, C-3606

A. For all federal coal lands, including those under surface management jurisdiction of the Forest Service, U.S. Department of Agriculture, contained within all the above identified preference right lease applications (PRLAs):

1. The lessee will protect all survey monuments, witness corners, reference monuments, and bearing trees against destruction, obliteration, or damage during operations on the lease areas. If any monuments, corners, or accessories are destroyed, obliterated, or damaged by this operation, the lessee will hire an appropriate county surveyor or registered land surveyor to reestablish or restore the monuments, corners, or accessories, at the same location, using surveying procedures in accordance with the "Manual of Surveying Instructions for the Survey of the Public Lands of the United States," and he will record the survey in the appropriate county records, with a copy sent to the authorized officer.

2. The lessee must comply with all valid and applicable laws and regulations of federal, state, and local governmental authority.

3. Any lease issued for the Savery PRLA project will be subject to valid existing rights.

4. Any federal coal recovered from the Savery project will be recovered by subsurface mining methods only.

B. Additional requirements, specifically applicable to those federal coal lands under surface management jurisdiction of the Forest Service, U.S. Department of Agriculture (all contained within PRLA W-0324035), are identified on BLM Form 3109-3 and Forest Service (R-2) Supplement D to Form 3109-3 (see Enclosure 1).

C. In addition to those requirements stated in A1 through A4 above, the lessee will be required to comply with other mitigation measures on those federal coal lands that are <u>not</u> under surface management jurisdiction of the Forest Service, U.S. Department of Agriculture, as specified below. It should be understood that the Forest Service may require any of the below mitigation measures that may be applicable to Forest Service administered lands within PRLA W-0324035.

1. <u>Cultural Resources</u>.

a) Before undertaking any activities that may disturb the surface of the leased lands, the lessee shall conduct a cultural resource intensive field inventory in a manner specified by the authorized officer of the BLM or the surface managing agency (if different)

on portions of the mine plan area and adjacent areas, or exploration plan area, that may be adversely affected by lease-related activities and which were not previously inventoried at such a level of intensity. The inventory shall be conducted by a qualified professional cultural resource specialist (i.e., archeologist, historian, or historical architect, as appropriate), approved by the authorized officer of the surface managing agency (BLM if the surface is privately owned and the surface owner consents to the survey), and a report of the inventory and recommendations for protecting any cultural resources identified shall be submitted to the Regional Director of the Office of Surface Mining and the authorized officer of the BLM or the surface managing agency (if different). The lessee shall undertake measures, in accordance with instructions from the Regional Director, to protect cultural resources on the leased land. The lessee shall not commence the surface disturbing activities until permission to proceed is given by the Regional Director (or BLM if activities are associated with coal exploration outside an approved mining permit area).

b) The lessee shall protect all cultural resource properties within the lease area from lease-related activities until the cultural resource mitigation measures can be implemented as part of an approved mining and reclamation plan or exploration plan.

c) The cost of conducting the inventory, preparing reports, and carrying out mitigation measures shall be borne by the lessee.

d) If cultural resources are discovered during operations under a lease, the lessee shall immediately bring them to the attention of the Regional Director (or BLM if activities are associated with coal exploration outside an approved mining permit area), or the authorized officer of the surface managing agency if the Regional Director, or BLM as appropriate, is not available. The lessee shall not disturb such resources except as may be subsequently authorized by the Regional Director (or BLM if activities are associated with coal exploration outside an approved mining permit area). Within two (2) working days of notification, the Regional Director (or BLM if activities are associated with coal exploration outside an approved mining permit area) will evaluate or have evaluated any cultural resources discovered and will determine if any action may be required to protect or preserve such discoveries. The cost of data recovery for cultural resources discovered during lease operations shall be borne by the surface managing agency unless otherwise specified by the authorized officer of the BLM or of the surface managing agency (if different).

e) All cultural resources shall remain under the jurisdiction of the United States until ownership is determined under applicable law.

2. Paleontological Resources.

a) Before undertaking any activities that may disturb the surface of any leased lands, the lessee shall contact BLM to determine whether the authorized officer will require the lessee to conduct a paleontological appraisal of the mine plan and adjacent areas, or exploration plan areas, which may be adversely affected by lease-related activities. If the authorized officer determines that one is necessary, the paleontological appraisal shall be conducted by a qualified paleontologist approved by the authorized officer of the surface managing agency (BLM if the surface is privately owned), using the published literature and, where appropriate, field appraisals for determining the possible existence of larger and more conspicuous fossils of scientific significance. A report of the appraisal and recommendations for protecting any larger and more conspicuous fossils of significant scientific interest on any leased lands so identified shall be submitted to the authorized officer of the surface managing agency (BLM if the surface is privately owned). When necessary to protect and collect the larger and more conspicuous fossils of significant scientific interest on any leased lands, the lessee shall undertake the measures provided in the approval of the mining and reclamation plan or exploration plan.

b) The lessee shall not knowingly disturb, alter, destroy, or take any larger and more conspicuous fossils of significant scientific interest, and shall protect all such fossils in conformance with the measures included in the approval of the mining and reclamation plan or exploration plan.

c) The lessee shall immediately bring any such fossils that might be altered or destroyed by his operation to the attention of the Regional Director or BLM as appropriate. Operations may continue as long as the fossil specimen or specimens will not be seriously damaged or destroyed by the activity. The Regional Director or BLM as appropriate, shall evaluate or have evaluated such discoveries brought to his attention and, within five (5) working days, shall notify the lessee what action shall be taken with respect to such discoveries.

d) All such fossils of significant scientific interest shall remain under the jurisdiction of the United States until ownership is determined under applicable law. Copies of all paleontological resource data generated as a result of any lease term requirements will be provided to the Regional Director or BLM as appropriate.

e) The cost of any required salvage of such fossils shall be borne by the United States.

f) These conditions apply to all such fossils of significant scientific interest discovered within any lease area whether discovered in the overburden, or coal seam or seams.

3. The lessee shall make every reasonable effort to avoid or where avoidance is impracticable, minimize dust problems. BLM may require sprinkling, oiling, or other means of dust control on roads, trails, etc. The lessee shall conduct processing so as to prevent, or if prevention is impossible, minimize to the maximum extent possible, environmental or health problems associated with dust.

4. In accordance with state law and regulation, the mine plan submittal shall include a detailed description of the effects of possible mined land subsidence and faulting. This must include the proposed measures to be taken to prevent or minimize the effects of subsidence and faulting and procedures that will be taken in terms of backfilling, grading, contouring, etc. in the event any subsidence or faulting occur.

5. No surface occupancy will be allowed on any federal coal lands contained within PRLAs C-3605 and C-3606. Any exceptions (if granted) for facilities (e.g., telephone lines, powerlines, ventilation shafts, etc.) will be subject to restrictive placement and type or design of facilities, seasonal occupancy restrictions, etc. and may be allowed only with prior written permission of the authorized officer.

6. As determined by the authorized officer, the lessee will develop equal or better water facilities to replace existing water facilities on federal coal lands disturbed or destoryed by mining.

7. Generally, reclamation of disturbed lands will be accomplished as contemporaneously with mining activities as possible. Spoil will be graded to a slope no steeper than 3®:1 and will be placed carefully to facilitate revegetation efforts. Material size will be reduced to allow seed application and final grading will occur on a contour basis. After grading, a minimum of 10 inches of suitable topsoil will be placed on the spoil, an acceptable seed mixture will be applied, and vegetation will be established. An acceptable seed mixture will reestablish existing vegetative diversity and type.

8. The lessee shall prepare and submit, concurrently with the filing of its mine plan, a socioeconomic and transportation impact mitigation study, concerning off-site aspects of the proposed developent. At a minimum, this study shall address and include a factual statement of the items outlined below.

    a) The estimated number of employees the specific lease operation would require during its phases of construction and operation, the estimated multiplied population attendant to the employment, and where that population is anticipated to reside.

b) An analysis of the estimated effect of that population influx upon the county and community infrastructure based on information acquired in consultation with state and local government, and including:

(1) The transportation system at the county and local level

(2) The domestic water requirements

(3) The domestic sewage treatment facilities and collection system requirements

(4) The requirements on the education facilities

(5) The requirements the new population would impose on the fire and police protection systems

(6) The requirements that the additional population would make on local government service systems, with primary emphasis on the normal public works of both county and municpal governments

(7) The requirements on the human service system

(8) The requirements imposed on the parks and recreation system

(9) An estimate as to the need, by type, and amount of housing that the new population would require on a community by community basis

c) A statement of the immediate impacts and long-term effects of mining on transportation facilities within the states, including:

(1) The estimated transportation mode(s), route(s), and frequency of trips for the extracted resource

(2) Contemplated construction of transportation facilities

(3) The estimated effect of any truck movements on the rate of roadway pavement deterioration, on the design life of the transportation mode, on the level of service repair and on overall safety to the motoring public

(4) A discussion of those measures that would or could mitigate impacts on those transportation modes such as proper signing, lighting, and design or access to and from public roadway(s).

d) A statement of the perceived roles and responsibilities of the lessee, the affected local governments, and the states of Wyoming and Colorado, relating to the technical and financial needs of the affected communities.

9. The lessee shall be required to maintain, improve or mitigate impacts to fisheries habitat in and along the streams passing through or downstream from the project area (e.g., Slater Creek, Savery Creek, Little Snake River). Mitigation may include fisheries habitat development and also may include, but is not limited to, such things as:

   a) Treatment of pumped groundwater during summer to meet or exceed the quality of the receiving waters. Provide cool, clean water for summer discharge. Discharge higher quality water as far upstream as possible and lower quality water as far downstream as possible.

   b) Purchase local water rights to provide increased summer streamflows and reduce amount of poorer quality irrigation water returning to streams (Little Snake River). Augment summer stream flows (e.g., storage).

   c) Develop stream control structures to provide additional cover or create survival pools in dewatered stream sections.

10. In order to protect existing eagle, falcon, and great blue heron nests, and sandhill crane nests/staging areas and their associated buffer zones (i.e., pertinent to application of coal unsuitability criteria numbers 11, 13 and 14), no surface coal mining operations will be allowed on such lands. Any exceptions (if granted) for support facilities (e.g., telephone lines, powerlines, ventilation shafts, etc.) will require that no surface disturbing activities are to take place in such areas during breeding and nesting seasons. In addition, such exceptions will be subject to restrictive placement and type or design of facilities, seasonal occupancy, etc. and may be allowed only with prior written permission of the authorized officer. The lands generally shown in Maps 10 and 12 of the final EIS contain the buffer zone areas for eagle, falcon, and great blue heron nests and sandhill crane nests and staging areas known to exist at this time. Since these and other bird species (i.e., pertinent to coal unsuitability criteria numbers 11, 12, 13, and 14) may move onto, off of, or elsewhere in the project area, their activities must be monitored to determine changing protection requirements.

    In addition, before commencing mining operations, the lessee shall be required to conduct an intensive survey of all potential high priority sandhill crane habitat (e.g., riparian/wetland areas) within the project area to identify any additional nests and staging areas that may require protection.

11. The lessee will conduct black-footed ferret inventories in accordance with the guidelines below. In the event that ferret occurrence is identified on lands to be affected by mining-related activities, the lessee will be required to adhere to any suggested modifications in the mining operation provided by the Fish and Wildlife Service and BLM.

    Black-Footed Ferret Inventory Guidelines:

    > Proposed developments such as coal lease lands, power plant sites, well fields, dam sites, and other major, block-type developments shall be surveyed for prairie dogs before the project is approved. If prairie dogs are found on the proposed site, colonies will be mapped on topographic maps and each colony surveyed using recommended black-footed ferret survey procedures. Ferret searches will be scheduled as close to actual construction as is reasonable to minimize the possiblity of missing ferrets that may move onto the area during the period between completion of surveys and the start of construction. Where project disturbance takes place over a long period of time, such as on a coal site, additional surveys for black-footed ferrets are recommended.

12. Any proposals of the lessee to construct or conduct mining-related surface facilities or activities on federal coal lands within the project area that are: 1) within a crucial elk and deer winter range, or 2) within a one-quarter mile radius from the center of sage and sharptail grouse strutting/nesting complexes are subject to stipulations for specific placement, design, and type of facilities and seasonal occupancy restrictions. Such determinations will be made by the BLM authorized officer on the lessee's submission of any such proposals on such areas on a case-by-case basis. The lessee should understand that such facilities or activities may not be allowable in a given situation or area.

13. Recovery of wildlife habitat on the project area shall be required. This requirement is in regard to the generally significant variety and importance of wildlife species and habitat in the project area. Of particular concern are crucial elk and mule deer winter range, fisheries habitat, important sage and sharptail grouse habitat, raptor/sandhill crane/great blue heron nesting and staging areas, and potential black-footed ferret habitat. The lessee will also be required to mitigate any such habitat loss because of surface coal mining operations in the project area.

    Mitigation methods may require the lessee to employ techniques for wildlife forage manipulation or intensive wildlife habitat management. Habitat recovery may not be completely feasible in the project area; therefore, recovery or replacement may be accomplished on lands made available through the surface management agency, the states, or the lessee outside the project area in combination with recovery and replacement methods on suitable lands within the project area.

In regard to the above, the lessee shall be required to develop a habitat recovery and replacement plan designed to protect and/or enhance wildlife habitat for the above-named species. This plan shall be prepared before mine plan approval and shall be prepared in consultation with and subject to approval by BLM, U.S. Fish and Wildlife Service (USFWS), and the states of Wyoming and Colorado.

The habitat recovery and replacement plan shall include, but is not limited to:

a) A detailed description of the methods selected by the lessee to mitigate habitat loss, together with a comparative analysis of alternate methods which were considered and rejected by the lessee and the rationale for the decision to select the proposed methods. The replacement may include, but is not limited to the following techniques:

   (1) Increasing the quantity and quality of forage available to wildlife.

   (2) The acquisition of wildlife crucial habitats.

   (3) Manipulation of wildlife habitat to increase its carrying capacity for selected wildlife species.

   (4) Recovery, replacement, or protection of important wildlife habitat by selected protection methods (e.g., fencing, etc.).

   (5) Wildlife watering developments.

b) A timetable giving the periods of time which will be required to accomplish the habitat recovery or replacement plan and showing how this timetable relates to the overall mining plan.

c) An evaluation of the final plan by the states of Wyoming and Colorado. The states will comment on the methods selected and the techniques to be employed by the lessee and may recommend alternate recovery or replacement methods. If the states have recommended alternate methods, the lessee shall consider the states' recommendations and, if the lessee rejects the states' recommendations, the lessee shall indicate its reasons as required by provision 2 above. If no state comment is included in the plan, the lessee shall verify its consultation with the states and the plan may be considered without state comment.

d) A habitat analysis of the permit area and those areas considered for off-site mitigation that identifies:

   (1) Distribution of important wildlife species (game, nongame, sensitive species, species of high federal interest, and threatened and endangered species).

   (2) Distribution of important standard habitat types.

(3) The relationship between the wildlife species and the standard habitat types that occupy the areas.

e) A comprehensive monitoring program to measure the effectiveness of the habitat recovery and replacement plan outlined above. Baseline data collection for comparison purposes would begin immediately upon leasing of the PRLAs. The success of a given recovery or replacement method will be determined by criteria established jointly by BLM, USFWS, and the states of Colorado and Wyoming.

14. The applicant shall prepare and submit to BLM and the Forest Service, concurrently with the filing of a mine plan, a hydrologic mitigation study, which includes a factual statement of the following:

a) Identification of all affected surface water, water table (unconfined), and artesian (confined) waters, including the location and direction of movement of all groundwater.

b) Appropriate characteristics of the waters, which might include: yield or flow, conductance, pH, temperature, alkalinity, total dissolved solids, dissolved amounts of such elements as sulfates, chlorides, barium, cadmium, copper, iron, lead, radioactive materials, etc., turbidity, and total dissolved oxygen.

c) Identification of development activities that would affect the above waters and the probable impact to such waters from each activity.

d) A discussion of the interrelationships between surface and groundwater in the project area and the likely effects to this relationship of developing the federal coal.

e) Identification of proposed mitigation measures to reduce the impacts identified in c, above.

f) Identification of impacts to waters and related elements of the environment (e.g., aquatic life, wildlife habitat, agricultural lands, etc.) that cannot be mitigated.

g) A plan for monitoring surface and groundwater conditions in the project area and downstream from the project on Slater Creek, Savery Creek and the Little Snake River. The water quality standards of the Wyoming Department of Environmental Quality, the state of Colorado, and the U.S. Public Health Service shall be used where applicable.

15. In conducting the coal unsuitability review for the project area, portions of the Slater Creek, Savery Creek and Little Snake River drainages, passing through or near the project area, were identified as possible alluvial valley floor (AVF) areas (coal unsuitability

criterion number 19). These identified possible AVF areas, or other areas near them where the proposed coal mining could interrupt or intercept water flow to farming areas along the drainages, may only be mined subject to mitigation measures for AVF protection that are made a part of an approved mine plan.

Form 3109-3
(June 1971)

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

Enclosure 1

STIPULATION FOR LANDS UNDER JURISDICTION OF DEPARTMENT OF AGRICULTURE*

The lands embraced in this lease or permit being under the jurisdiction of the Secretary of Agriculture, the lessee or permittee hereby agrees:

(1) To conduct all operations authorized by this lease or permit with due regard for good land management, not to cut or destroy timber without first obtaining permission from the authorized representative of the Secretary of Agriculture, and to pay for all such timber cut or destroyed at the rates prescribed by such representative; to avoid unnecessary damage to improvements, timber, crops, or other cover; unless otherwise authorized by the Secretary of Agriculture, not to drill any well, carry on operations, make excavations, construct tunnels, drill, or otherwise disturb the surface of the lands within 200 feet of any building standing on the lands and whenever required, in writing, by the authorized representative of the Secretary of Agriculture to fence or fill all sump holes, ditches, and other excavations, remove or cover all debris, and so far as reasonably possible, restore the surface of the lands to their former condition, including the removal of structures as and if required, and when required by such representative to bury all pipelines below plow depth

(2) To do all in his power to prevent and suppress forest, brush, or grass fires on the lands and in their vicinity, and to require his employees, contractors, subcontractors, and employees of contractors or subcontractors to do likewise. Unless prevented by circumstances over which he has no control, the lessee or permittee shall place his employees, contractors, subcontractors, and employees of contractors and subcontractors employed on the lands at the disposal of any authorized officer of the Department of Agriculture for the purpose of fighting forest, brush, or grass fires on or originating on the lands or on adjacent areas or caused by the negligence of the lessee or permittee or his employees, contractors, subcontractors and employees of contractors and subcontractors, with the understanding that payment for such services shall be made at rates to be determined by the authorized representative of the Secretary of Agriculture, which rates shall not be less than the current rates of pay prevailing in the vicinity for services of a similar character: *Provided*, that if the lessee or permittee, his employees, contractors, subcontractors, or employees of contractors or subcontractors, caused or could have prevented the origin or spread of said fire or fires, no payment shall be made for services so rendered.

During periods of serious fire danger to forest, brush, or grass, as may be specified by the authorized representative of the Secretary of Agriculture, the lessee or permittee shall prohibit smoking and the building of camp and lunch fires by his employees, contractors, subcontractors, and employees of contractors or subcontractors within the area involved except at established camps, and shall enforce this prohibition by all means within his power: *Provided*, that the authorized representative of the Secretary of Agriculture may designate safe places where, after all inflammable material has been cleared away, campfires may be built for the purpose of heating lunches and where, at the option of the lessee or permittee, smoking may be permitted.

The lessee or permittee shall not burn rubbish, trash, or other inflammable materials *except* with the consent of the authorized representative of the Secretary of Agriculture and shall not use explosives in such a manner as to scatter inflammable materials on the surface of the lands during the forest, brush, or grass fire season, *except* as authorized to do so or on areas approved by such representative.

The lessee or permittee shall build or construct such fire lines or do such clearing on the lands as the authorized representative of the Secretary of Agriculture decides is essential for forest, brush, and grass fire prevention which is or may be necessitated by the

* This form of stipulation may be used in connection with leases and permits issued under the Acts of February 25, 1920, as amended (30 U.S.C. 181 *et seq.*); August 7, 1947 (30 U.S.C. 351 *et seq.*), February 7, 1927, as amended (30 U.S.C. 281 *et seq.*); April 17, 1926, as amended (30 U.S.C. 271 *et seq.*); June 28, 1944 (58 Stat. 483–485); September 1, 1949 (30 U.S.C. 192c), June 30, 1950 (16 U.S.C. 508b), or under the authority of any of the Acts cited in Section 402 of the President's Reorganization Plan No. 3 of 1946 (5 U.S.C. 133y–16, Note).

exercise of the privileges authorized by this lease or permit, and shall maintain such fire tools at his headquarters or at the appropriate location on the lands as are deemed necessary by such representative.

(3) In the location, design, construction, and maintenance of all authorized works, buildings, plants, waterways, roads, telegraph or telephone lines, pipelines, reservoirs, tanks, pumping stations, or other structures or clearance, the lessee or permittee shall do all things reasonably necessary to prevent or reduce to the fullest extent scarring and erosion of the lands, pollution of the water resources and any damage to the watershed. Where construction, operation, or maintenance of any of the facilities on or connected with this lease or permit causes damage to the watershed or pollution of the water resources, the lessee or permittee agrees to repair such damage and to take such corrective measures to prevent further pollution or damage to the watershed as are deemed necessary by the authorized representative of the Secretary of Agriculture.

(4) If in the opinion of the authorized representative of the Secretary of Agriculture, the lands are valuable for watershed protection, the lessee or permittee shall provide for control of surface runoff and return the affected area to as productive condition as practicable.

(5) To pay the lessor or permitter or his tenant or the surface owner or his tenant, as the case may be, for any and all damage to or destruction of property caused by the lessee's or permittee's operations hereunder; to save and hold the lessor or permitter or the surface owner or their tenants harmless from all damage or claims for damage to persons or property resulting from the lessee's or permittee's operations under this lease or permit.

(6) To recognize existing uses and commitments, in the form of Department of Agriculture grazing, timber cutting, and special use permits, water developments, ditch, road, trail, pipeline, telephone line, and fence rights-of-way and other similar improvements, and to conduct his operations so as to interfere as little as possible with the rights and privileges granted by these permits or with other existing uses.

(7) To install and maintain cattle guards to prevent the passage of livestock in any openings made in fences by the lessee or permittee or his contractors to provide access to the lands covered by this lease or permit for automotive and other equipment.

(8) If lessee or permittee shall construct any camp on the lands, such camp shall be located at a place approved by the authorized representative of the Secretary of Agriculture, and such representative shall have authority to require that such camp be kept in a neat and sanitary condition.

(9) To comply with all federally-approved rules and regulations of the Secretary of Health, Education, and Welfare governing the emission of pollutants into the air from activities which are embraced in this lease or permit.

(10) To comply with all the rules and regulations of the Secretary of Agriculture governing the national forests or other lands under his jurisdiction which are embraced in this lease or permit.

(11) Unless otherwise authorized, prior to the beginning of operations to appoint and maintain at all times during the term of this lease or permit a local agent upon whom may be served written orders or notices respecting matters contained in this stipulation, and to inform the authorized representative of the Secretary of Agriculture, in writing, of the name and address of such agent. If a substitute agent is appointed, the lessee or permittee shall immediately so inform the said representative.

(12) To address all matters relating to this stipulation to

Forest Supervisor
at Medicine Bow National Forest
605 Skyline Drive
Laramie, Wyoming 82070

who is the authorized representative of the Secretary of Agriculture, or to such other representative as may from time to time, be designated, provided that such designation shall be in writing and be delivered to the lessee or permittee or his agent.

(Signature of Lessee)

GPO 8 .0-292

FOREST SERVICE (R-2) SUPPLEMENT D
TO FORM 3109-3

SERIAL NO._____

SURFACE DISTURBANCE STIPULATION

1. Notwithstanding any provision of this license/permit/lease to the contrary, any drilling, construction or other operation on the lanos covered by this license/permit/lease that will disturb the surface thereof or otherwise affect the environment (hereinafter called "surface disturbing operation") conducted by licensee/permittee/lessee shall be subject, as set forth in this stipulation, to the prior aporoval of such operation by the authorized officer of the Geological Survey in consultation with the Forest Service, and to such reasonable conoitions not inconsistent with the purooses for which this license/ permit/lease is issued, as the authorized officer may require to protect the surface of these lands and the environment.

2. Prior to entry upon the land, or the disturbance of the surface thereof, for drilling or other purposes, the licensee/permittee/lessee shall submit for approval the appropriate number of copies of a map and explanation of the nature of the anticipated activity and surface disturbance to the authorized officer of U.S. Geological Survey and the Forest Service Officer, as shown in Item 12 of BLM Form 3109-3. The plan of operation must assure adequate protection of drainages, water bodies, springs, or fish and wildlife habitat, steep slopes or fragile soil.

3. An environmental analysis will be made by the Geological Survey, in consultation with the Forest Service, for the purpose of insuring proper protection of the surface, the natural resources, the environment, existing improvements, and for assuring timely reclamation of disturbed lands.

   Upon completion of said environmental analysis, the authorized officer of the Geological Survey shall notify the licensee/permittee/lessee of the conditions, if any, to which the proposed surface disturbing operations will be subject.

   Said conditions may relate to any of the following:

   (a) The location of drilling or other exploratory or developmental operations or the manner in which they are to be conducted.

   (b) The types of vehicles that may be used and the areas in which they may be used.

   (c) The manner or location in which improvements such as roads, buildings, pipelines, or other improvements are to be constructed.

4. The licensee/permittee/lessee agrees that during periods of adverse conditions due to climatic factors such as thawing, heavy rains, or flooding, all activities creating irreparable or extensive damage, as determined by the Forest Service, will be suspended or the plan of operation modified and agreed upon.

5. PROTECTION OF CULTURAL AND PALEONTOLOGICAL RESOURCES

   (a) The Forest Service is responsible for assuring that the area to be disturbed on this license/permit/lease is inventoried to determine the presence of cultural resources and to specify those cultural resources requiring protection and/or mitigation measures to be undertaken by the operator.

   Unless notified to the contrary by the Forest Service, the operator may, at his discretion and cost, conduct the inventory on the lands to be disturbed. This intensive inventory must be done by, or under the supervision of, a qualified archeologist approved by the Forest Service. Upon review of the inventory report, the Forest Service will specify those cultural resources requiring protection and/or mitigation measures to be undertaken by the operator. All costs of protection and salvage of cultural resource values will be borne by the operator and all data and materials salvaged will remain under the jurisdiction of the U.S. Government as appropriate.

   (b) The operator shall bring to the attention of the Forest Service and the authorized officer of the U.S. Geological Survey, significant paleontological values encountered in areas to be disturbed, for evaluation and for instructions as to the appropriate action to be followed by the operator.

   (c) The operator shall immediately cease operations in areas in which any antiquities or other objects of historic or scientific interest are discovered and bring the discovery to the attention of the Forest Service and the authorized officer of the U.S. Geological Survey. Any such discoveries shall be left intact until the operator is permitted to proceed by the authorized officer of the U.S. Geological Survey.

6. PROTECTION OF ENDANGERED OR THREATENED SPECIES

   The Forest Service is responsible for assuring that the area to be disturbed is examined, prior to undertaking any ground disturbing activities on lands covered by this license/permit/lease, to determine effects upon any plant or animal species listed or proposed for listing as endangered or threatened, or their habitats. The findings of this examination may result in some restrictions to the operator's plans or even disallow any use and occupancy that would detrimentally affect any of the endangered or threatened plant or animal species.

   The operator may, at his discretion and cost, conduct the examination on the lands to be disturbed. This examination must be done by or under the supervision of a qualified resource specialist approved by the Forest Service. an acceptable report must be provided to the Forest Service identifying the anticipated effects of the proposed action on endangered or threatened species or their habitat.

_____
Licensee/Permittee/Lessee

(8/79)

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SUMMARY

This environmental impact statement analyzes the impacts of developing a 4 to 7 million ton per year subsurface coal mine and presents an analysis of the Bureau of Land Management's preferred alternative, which proposes that no mining occur in this area in the foreseeable future.

The environmental impact statement is based on the Savery Site-Specific Environmental Report (1982) and the Rawlins District land-use planning decisions for coal development in the Divide Resource Area (BLM 1982).

The proposed coal mine consists of eight areas covered by preference right lease applications, which are held by Gulf Oil Corporation and are located in Wyoming and Colorado near Savery, Wyoming.

The Savery preference right lease applications have potential for subsurface mining only. Most of the surface facilities for the underground mining operation would be located on private lands. Impacts resulting from surface facility placement and mine operations would be insignificant. Significant impacts would occur when mine employees would settle in the Savery area and cause an increase of total population between 4,800 and 8,600 persons. These impacts would be further aggravated when the mine closed and workers migrated from the area, leaving behind an oversupply of housing and community services.

Transportation systems, health facilities, and other services (police, fire protection, etc.) in the Savery area are adequate for the existing population of about 600 persons. However, extensive investment would be required to expand these services to accommodate 4,800 to 8,600 persons.

The Savery project could produce 4 to 7 million tons of coal per year. This level of production could directly compete with new and existing mines. If the Savery project impedes or delays new mine development near communities along Interstate Highway 80 (I-80), the economic recession in these communities could be aggravated.

The Savery project would employ between 1,000 and 1,800 persons and would cause an estimated population increase of 4,800 to 8,600 persons. Nearly all of these people would settle in the Savery area. This new settlement would occur on crucial big game winter ranges, threatened and endangered wildlife species habitat, and floodplains.

The Savery area contains some of the highest quality wildlife habitat in south-central Wyoming. This habitat is essential to the survival of a variety of wildlife, ranging from elk and deer to bald eagles and great blue herons. People moving into the area would build their homes and businesses within these habitats. Increased human activity in these areas could cause displacement of many animals to other habitat areas that are inadequate to support them. In addition, other habitat areas may not be available. Human activity during a severe winter could cause a significant mortality rate for elk, deer, and perhaps, bald eagles. These wildlife and economic impacts would be significant. While Bureau of Land Management could prevent settlement from occurring on federal lands, the impacts from human activities and possible settlement on private lands would still be significant.

Bureau of Land Management is obligated to process the preference right lease applications to determine if the applicant is entitled to a coal lease on the area. However, given the possibility for significant impacts, the No Development Alternative is Bureau of Land Management's preferred alternative.

INTRODUCTION

PURPOSE AND NEED

Gulf Oil Corporation holds eight preference right coal lease applications (PRLAs) in the vicinity of Savery, Wyoming (Table 2 and Map 3). As required by the regulations pertaining to management of federally owned coal (43 CFR 3430.3-1), the Department of the Interior must complete processing of all PRLAs by December 1, 1984. (PRLA processing is more fully described below.) This environmental impact statement (EIS) complies with the National Environmental Policy Act and is a part of the processing requirements for PRLAs.

EXTENT AND LOCATION OF THE SAVERY PROJECT

The Savery project is located in Wyoming and Colorado, about 13 miles east of Baggs, Wyoming, and 50 miles south of Rawlins, Wyoming (Maps 1 and 2). The project proposal would include Gulf Oil's eight application areas in a single subsurface (underground) coal mining operation, encompassing approximately 49,000 acres. Surface and mineral ownership in the project area is complex, since much of the federal coal is overlain by privately owned surface. The U.S. Forest Service (USFS) administers approximately 1,200 acres of land in PRLAs W-0324035 and W-0324037. Bureau of Land Management (BLM) is authorized to lease all federal minerals, including federally owned coal in USFS administered lands. However, BLM must receive USFS consent before leasing coal in USFS administered lands. (Maps 3 and 4 and Table 1 show land and coal ownership.)

Even though the Savery project includes state and coal and private lands, the EIS analyzes the entire project area. Decisions regarding mitigation requirements and federal coal lease stipulations will be made for federal lands and federal coal only.

TABLE 1

SURFACE AND COAL OWNERSHIP

	Surface Ownership (acres)	Coal Ownership (acres)
Private	23,576.00	2,832.97
State of Wyoming	15,241.01	14,678.58
State of Colorado	633.07	633.07
U.S. Government		30,442.49
Forest Service	1,172.35	
Bureau of Land Management	7,963.88	
Total	**48,587.00**	**48,587.00**

TABLE 2

PRLA COAL RESERVE INFORMATION

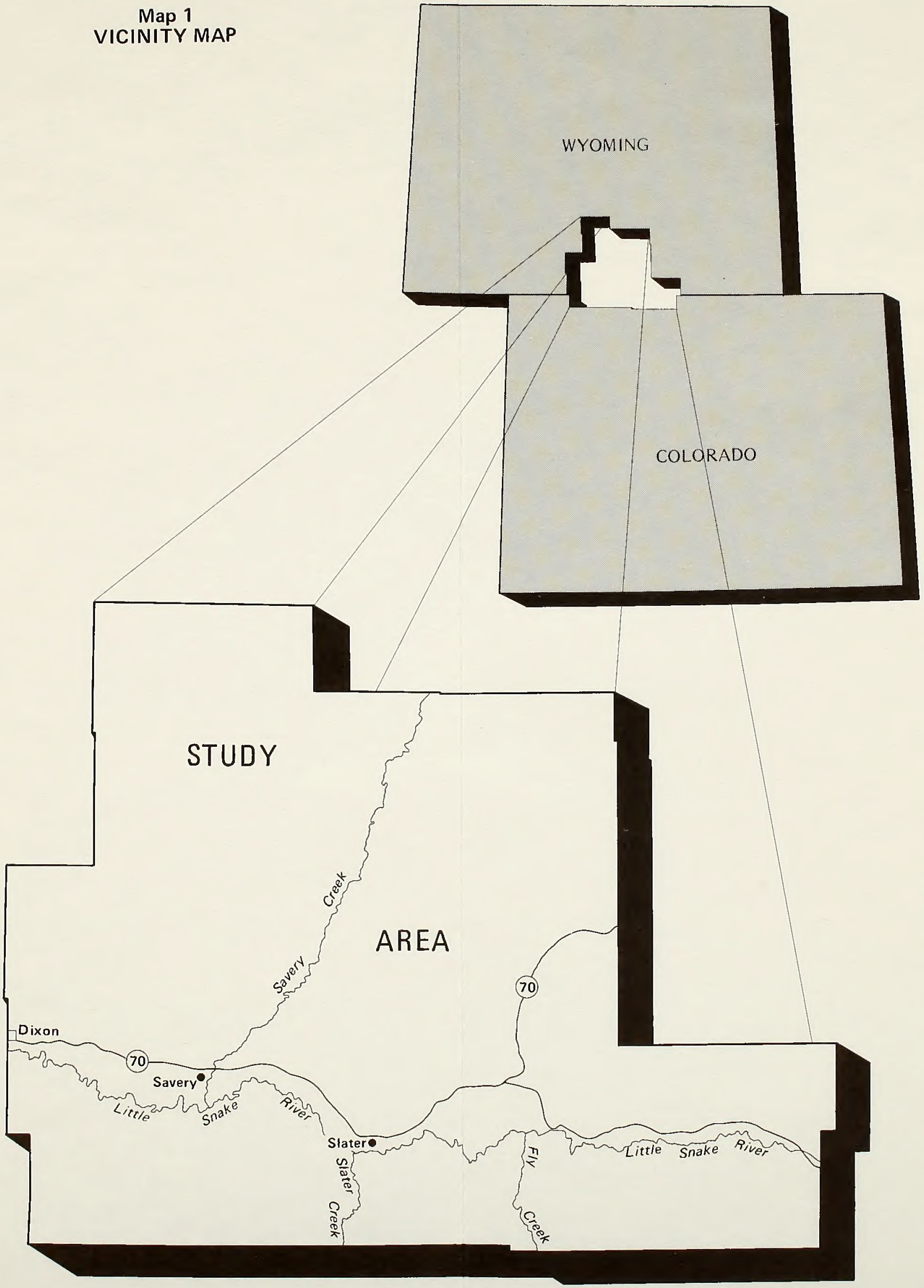
PRLA Numbers[1]	Measured Reserves[2] (million tons)	Indicated Reserves[2] (million tons)
W-0324034	7.016	13.636
W-0324035	7.310	34.264
W-0374036	4.910	14.627
W-0324038	14.587	68.693
W-0324041	11.085	36.969
W-0324042	.413	.450
C-3605	1.810	4.753
C-3606	10.803	31.825
Total	**57.934**	**205.21**

Total demonstrated federal reserves = 263.144 million tons
BTU content (weighted average) = 10,502 BTU per pound
Sulfur content (weighted average) = 0.58 percent

[1]PRLA number W-0324037 has been withdrawn by the applicant.

[2]Measured and indicated are technical terms which describe the manner in which reserves are estimated. Measured reserves are closer to the drill holes or observation points than the indicated reserves. Definitions of these terms are found in USGS Bulletin 1450-B.

Map 1
VICINITY MAP



1 Continental Divide
2 North Horse Butte
3 Atlantic Rim
4 Cottonwood
5 Baggs
6 Stagecoach
7 Red Monument
8 Cedars
9 Cow Creek
10 Cherokee
11 Red Rim
12 China Butte
13 Hansen Draw
14 Savery PRLA
15 Kindt Basin

R. 93 W.

R 92 W
R 91 W
R 90 W
R 89 W
R 88 W
R 86 W
R 85 W

T 20 N
T 19 N
T 18 N
T 17 N
T 16 N
T 15 N
T 14 N
T 13 N
T 12 N

SWEETWATER COUNTY
CARBON COUNTY

Fillmore Creek
Separation Creek
Muddy Creek
Cow Creek
Dry Cow Creek
Wild Cow Creek
Cherokee Creek
Little Snake River
Snake River
Cottonwood Creek

30
80
789
76

Baggs
Dixon
Savery

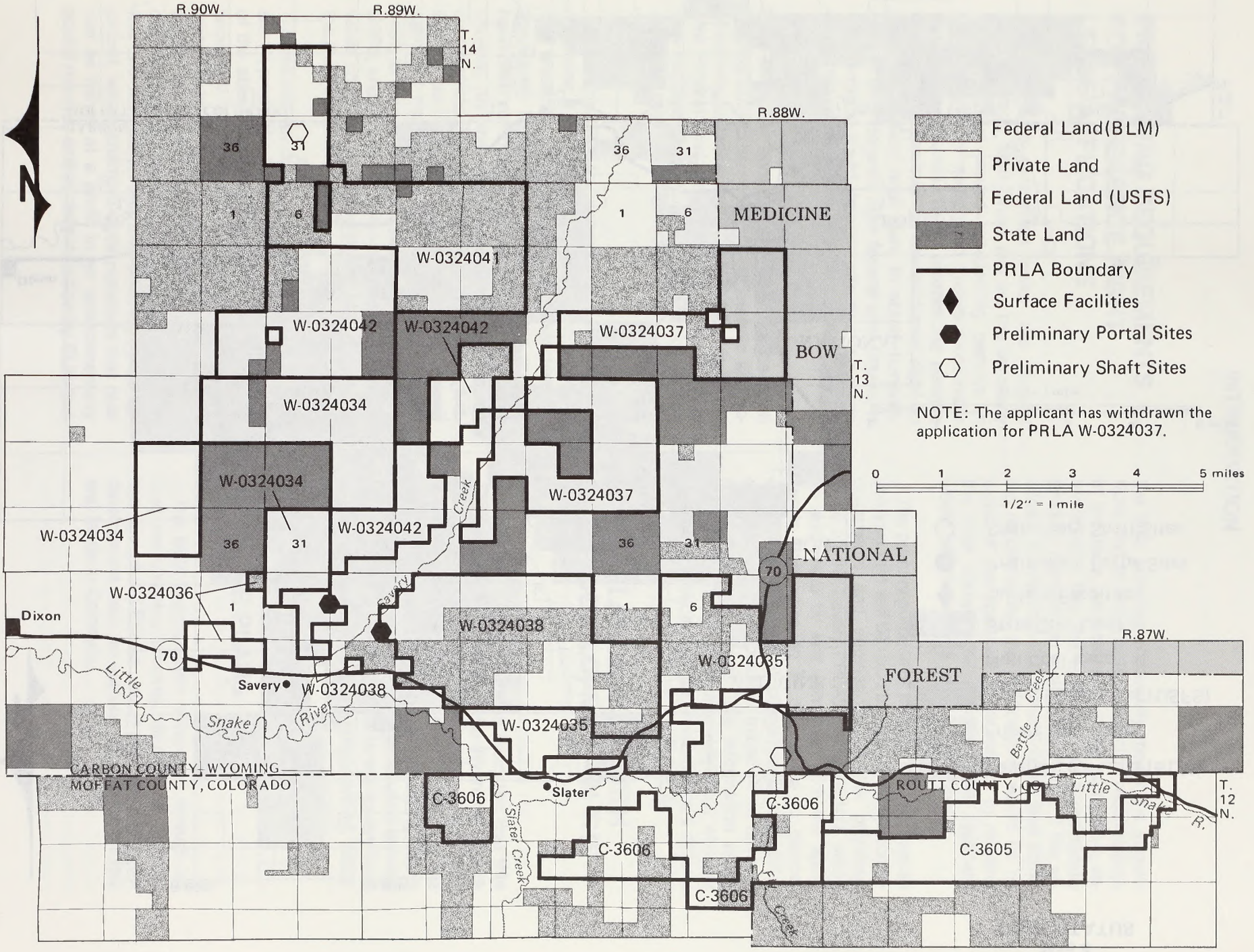
DIVIDE
BASIN
PU
Rawlins
Wamsutter
OVERLAND
PU
Sweetwater Co.
Carbon Co.

0 1 8
Scale in Miles

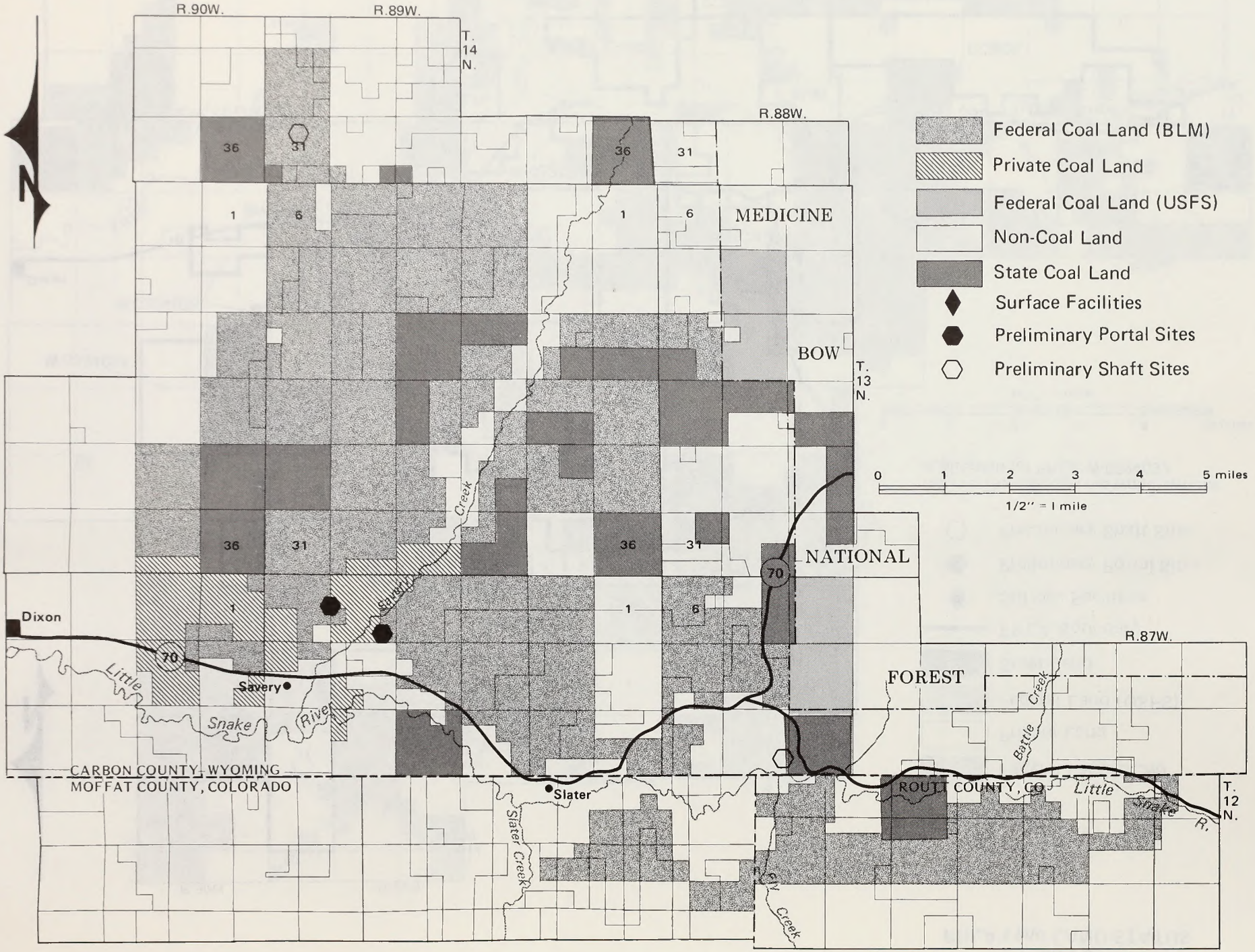
N

Map 2
POTENTIAL COAL DEVELOPMENT
AREAS IN WYOMING

Map 3
PRLA's and LAND STATUS



Map 4
COAL STATUS



PROCESSING REQUIREMENTS FOR PREFERENCE RIGHT LEASE APPLICATIONS

PRLAs were authorized under the Mineral Leasing Act of 1920. Under this act the Secretary of the Interior issued prospecting permits in areas outside of designated known recoverable coal resource areas. These prospecting permits entitled the permittee to the exclusive right to prospect for coal and, then, to obtain noncompetitive or preference right federal coal leases, if the permittee could demonstrate that the lands contained coal in commercial quantities.

The Federal Coal Leasing Amendments Act of 1976 abolished noncompetitive (preference right) leasing, subject to valid existing permits and applications, including the Savery PRLAs. Under the new Federal Coal Management Program, BLM is now required to complete processing of all outstanding PRLAs by no later than December 1, 1984.

Processing PRLAs involves a series of steps to determine if an applicant is entitled to a federal coal lease or if an application will be rejected. For the Savery PRLAs, three steps of this process have been completed: (1) submission of an initial showing by the applicant, which attempts to demonstrate the existence of commercial quantities of coal in the proposed lease areas; (2) application of the coal unsuitability criteria (43 CFR 3461) to the proposed lease areas by the BLM and USFS; and (3) an evaluation of other multiple-use value conflicts on the proposed lease areas by the BLM and USFS.

Steps not yet completed on the Savery PRLAs are: (1) preparation of an EIS based on the results of the above three steps; (2) development of any necessary stipulations and mitigation requirements, to be included in a lease proposal, for protection of environmentally sensitive areas or other values as identified in the EIS; (3) preparation and submission of a final showing by the applicant, which attempts to demonstrate that coal can be mined at a profit in an environmentally sound manner; and (4) determination by BLM that the final showing adequately meets the stipulations and environmental protection requirements in the lease proposal, and, at the same time, determination that the applicant can economically produce commercial quantities of coal. If the applicant is unsuccessful in meeting the final showing requirements, the applications would be rejected. If the applicant is successful in meeting the final showing requirements, the applicant would be entitled to a federal coal lease.

The primary purpose of this EIS is to prepare an analysis that will be used to identify mitigation requirements and stipulations for the proposed lease on the Savery PRLAs. These factors would be addressed by and combined with the applicant's final showing in attempting to demonstrate that commerical quantities of coal exist and that the coal could be mined in an environmentally sound manner. This information would then be evaluated by BLM to determine whether or not the applicant would be entitled to a federal coal lease on all or part of these PRLAs.

INTERRELATIONSHIPS WITH OTHER DEVELOPMENT IN THE AREA

The state of Wyoming has indicated that this project might conflict with the Wyoming Department of Environmental Quality regulations regarding alluvial valley floors and wildlife habitat. According to state of Wyoming representatives, these conflicts might lead to difficulties in permitting a coal mine in the Savery area (letter from Governor of Wyoming, April 14, 1982).

RELATIONSHIP WITH OTHER COAL DEVELOPMENT AND LAND-USE PLANS

The BLM Craig District office has, through its land-use planning process, determined that the two Colorado PRLAs are acceptable for coal development with no surface occupancy on federal lands in Colorado.

There are some coal leases held by W.R. Grace about 30 miles south of the Savery area. The China Butte Coal Company and Cherokee leases are about 30 miles north of the area in Colorado. There are no plans to develop these leases in the near future.

Analyses done to date by the USFS indicate development of the Savery PRLAs is compatible with USFS land-use planning.

The development of the proposed Savery PRLA project conflicts with BLM's land-use planning decisions concerning coal development in the Rawlins District.

Unlike PRLAs, other unleased federal coal will be made available for leasing to many potential bidders in a competitive free-market system. Under the competitive coal leasing program, federal lands will be scrutinized for their coal quality, quantity, and development potential and conflicts between coal development and other land and resource uses and values. Only those federal coal lands in which there is substantial interest in leasing and coal development, and is determined to be acceptable, will be leased.

Any coal that is leased under the competitive coal leasing program will have first been considered in a land-use plan, a series of site-specific environmental analyses on the proposed tracts, and a regional coal EIS (all include public involvement). This process gives a developer a reasonable expectation that he will be able to mine a particular area without especially stringent environmental stipulations being added on after he has invested in the coal lease.

BLM has made some land-use planning decisions for competitive federal coal areas in the vicinity of the Savery PRLAs. These decisions would allow for the development of more coal, of essentially equal quality to the coal in the PRLAs, north of the Savery area (Map 2). Although mining of this northern coal has the potential to create significant environmental impacts, it would be closer to existing transportation systems. This would translate into cheaper coal production and mitigation costs and fewer environmental impacts than would occur in the Savery PRLAs. The northern coal areas are closer to existing communities that could accommodate and need increased economic growth. Conversely, the Little Snake River Valley cannot easily accommodate significant growth (BLM 1982). This is discussed further in the Socioeconomic section of this document.

BLM's land-use planning decisions state that if it were not for the Savery PRLAs, development could begin in these northern coal areas and proceed south over time to the Savery area. Simply stated, when considering all of the areas from which coal can be mined in Carbon County, it is not the right time to mine coal in the Savery area.

BLM's land-use planning decisions also state that if it were determined that the applicant were entitled to a lease on one or more of the Savery PRLAs, BLM would attempt to negotiate with the applicant for an equitable exchange for his right to lease the coal for other commodities. (See Figure 1, which delineates processing requirements for PRLAs.) The applicant's entitlement to a lease would give him a legal right to a coal lease; therefore, there would be no assurances that an exchange would occur. With the applicant's concurrence, his entitlement to a coal lease could be exchanged, on an equal-value basis only, for:

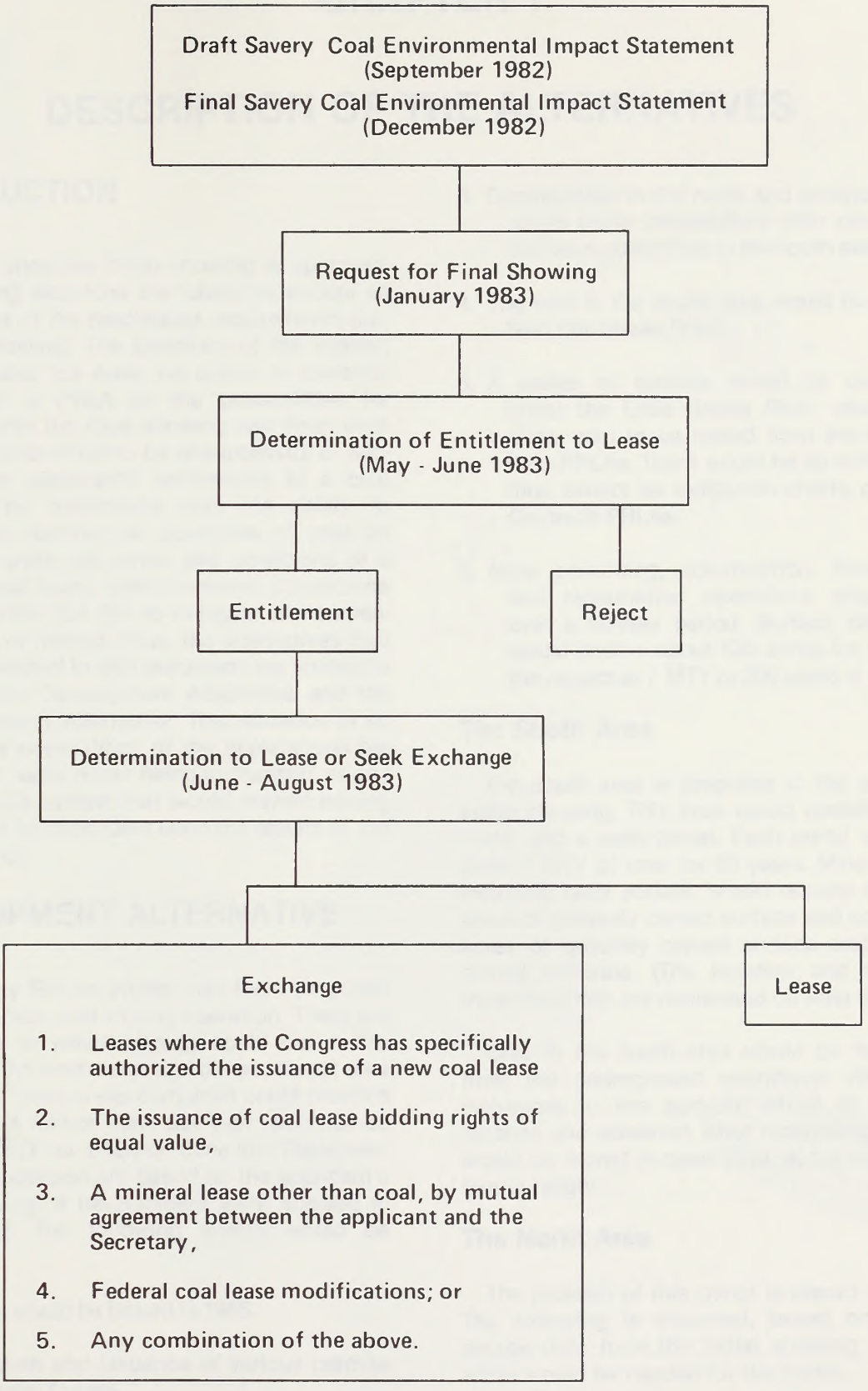
1. A coal lease in another area where Congress has specifically authorized the exchange of the Savery PRLAs for the issuance of a new federal coal lease (i.e., a special act of Congress would be required);

2. Coal lease bidding rights, which would be applied in bidding for a federal coal lease in another area under the competitive coal leasing program;

3. A lease for another leasable federal mineral (i.e., other than coal or oil and gas) in another area;

4. A federal coal lease modification to expand an existing lease or mine; or,

5. Any combination of the above.


Draft Savery Coal Environmental Impact Statement
(September 1982)
Final Savery Coal Environmental Impact Statement
(December 1982)
Request for Final Showing
(January 1983)
Determination of Entitlement to Lease
(May - June 1983)
Entitlement
Reject
Determination to Lease or Seek Exchange
(June - August 1983)
Exchange
1. Leases where the Congress has specifically authorized the issuance of a new coal lease
2. The issuance of coal lease bidding rights of equal value,
3. A mineral lease other than coal, by mutual agreement between the applicant and the Secretary,
4. Federal coal lease modifications; or
5. Any combination of the above.
Lease

PRLA FLOW CHART
Figure 1

CHAPTER 1

DESCRIPTION OF THE ALTERNATIVES

INTRODUCTION

Because once the initial showing is approved, PRLA leasing decisions are totally dependent on the outcome of the processing requirements (i.e., the final showing). The Secretary of the Interior, therefore, does not have the option to consider rejection of a PRLA or the possibilities for exchange until the final showing has been evaluated and determined to be unsuccessful or successful. The applicant's entitlement to a coal lease will be determined from his ability to demonstrate commercial quantities of coal on the PRLAs under the terms and conditions of a proposed coal lease, which includes stipulations developed from this EIS to mitigate environmental impacts of mining. Thus, the alternatives that can be addressed in this document are limited to only two—the Development Alternative and the No Development Alternative. This situation is so because the possibilities of the applications being rejected, lease rights being exchanged, or any other available avenue that would prevent mining the area, are all dependent upon the results of the final showing.

DEVELOPMENT ALTERNATIVE

The Savery PRLAs project has been proposed as a subsurface coal mining operation. There are three areas in which mining could occur: the south area, the north area, and the southeast area (Map 5). The three areas combined could produce as little as 4 million tons per year ($\overline{M}$TY) or as much as 7 $\overline{M}$TY for a 46-year mine life. These estimates of production are based on the applicant's initial showing. If development were allowed in these areas, the following events would be assumed:

1. The lease would be issued in 1985.

2. Construction and issuance of various permits would take 7 years.

3. Construction in the north and southeast areas would begin immediately after construction had been completed in the south area.

4. The coal in the south area would be mined to the Little Snake River.

5. A series of tunnels would be constructed under the Little Snake River, which would allow coal to be mined from the two Colorado PRLAs. There would be no surface facilities, except for ventilation shafts, on the two Colorado PRLAs.

6. Mine permitting, construction, development, and reclamation operations would occur over a 60-year period. Surface disturbance would involve about 625 acres for the life of the project at 7 $\overline{M}$TY or 300 acres at 4 $\overline{M}$TY.

The South Area

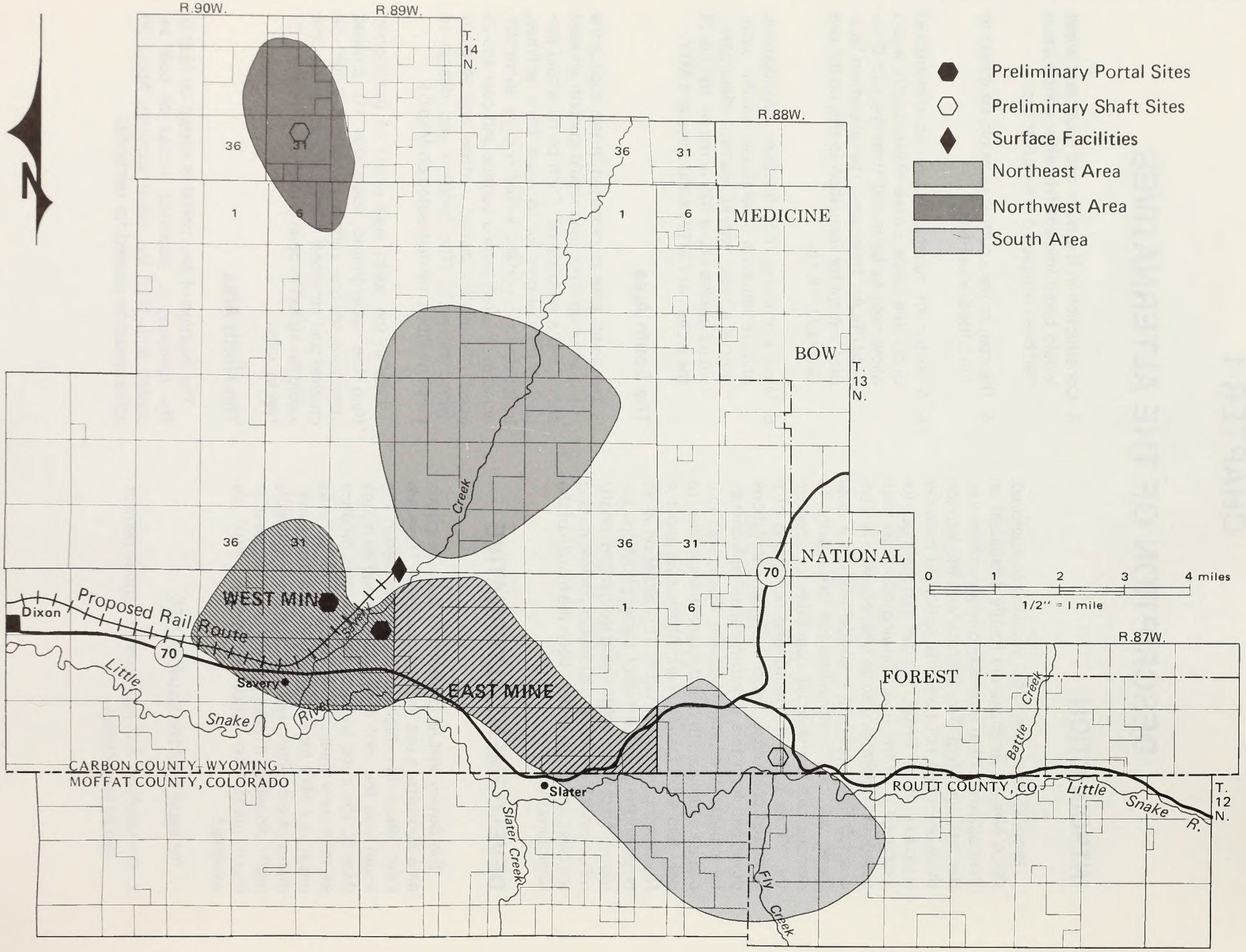
The south area is proposed in the applicant's initial showing. This area would contain an east portal and a west portal. Each portal would produce 2 $\overline{M}$TY of coal for 36 years. Mine facilities, including both portals, would occupy about 275 acres of privately owned surface and coal and 25 acres of privately owned surface and federally owned minerals. (The location and design of these facilities are delineated on Map 6.)

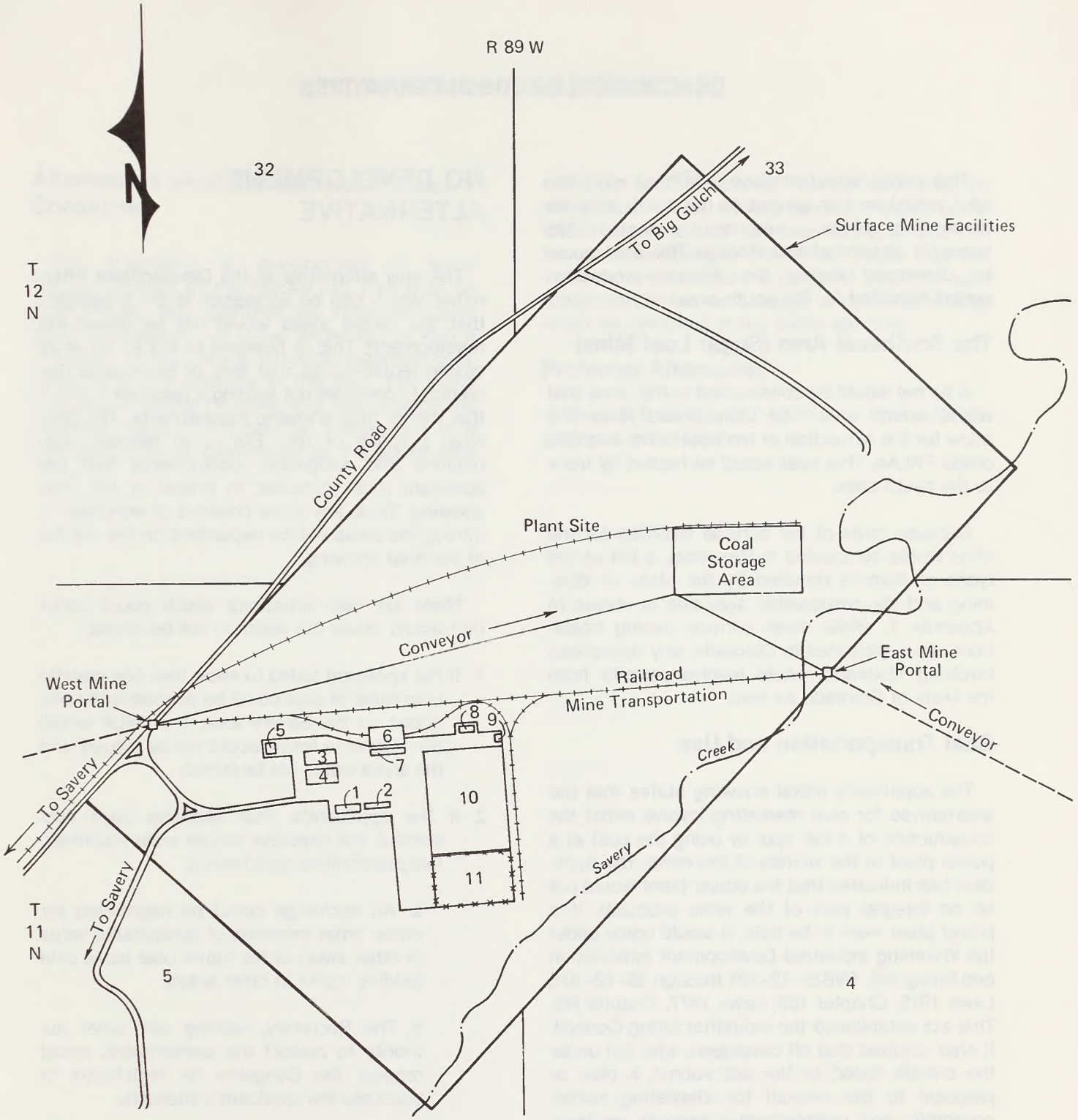
Coal in the south area would be transported from the underground operations via covered conveyors to the surface, where it would be crushed and screened. After processing, the coal would be stored in open piles, some reaching 50 feet in height.

The North Area

The location of this portal is shown on Map 5. The following is assumed, based on coal resource data from the initial showing. About 50 acres would be needed for the portal.

Map 5
RECOVERABLE COAL RESOURCE AREAS





LEGEND

1. Office
2. Office Parking
3. Change House
4. Change House Parking
5. Quality Control Office
6. Maintenance Shop and Warehouse Office
7. Shop and Warehouse Parking
8. Boiler House
9. Welding Shop
10. Shop and Warehouse Storage
11. Mine Yard

500 0 500 1000

Scale in Feet

Map 6
SURFACE MINE FACILITIES

This portal would produce 3 $\overline{M}$TY of coal. The coal would be transported to the south area for processing, which would require another 225 acres for equipment and storage. This coal would be developed during the 46-year production period specified for the south area.

The Southeast Area (Sugar Loaf Mine)

A tunnel would be constructed in this area that would extend under the Little Snake River and allow for the extraction of the coal in the two Colorado PRLAs. This coal would be hauled by truck to the south area.

Because most of the surface facilities for the mine would be located in Wyoming, a list of the types of permits required by the state of Wyoming and the responsible agencies is shown in Appendix 1. While most surface mining operations are anticipated in Colorado, any operations involving Colorado would involve permits from the state of Colorado as well.

Coal Transportation and Use

The applicant's initial showing states that the alternatives for coal marketing involve either the construction of a rail spur or using the coal at a power plant in the vicinity of the mine. The applicant has indicated that the power plant would not be an integral part of the mine proposal. If a power plant were to be built, it would come under the Wyoming Industrial Development Information and Siting Act, (WS35-12-101 through 35-12-101; Laws 1975, Chapter 169; Laws 1977, Chapter 66). This act established the Industrial Siting Council. It also required that all developers who fall under the criteria listed in the act submit a plan or proposal to the council for alleviating social, economic, and environmental impacts on local government.

The council must approve a plan before it will grant a permit for constructing the facility. If federal authorization is required for a power plant, further environmental analysis will be conducted.

NO DEVELOPMENT ALTERNATIVE

The only alternative to the Development Alternative which can be addressed is the possibility that the permit areas would not be mined (no development). This is because of the PRLA processing requirements and lack of Secretarial discretion to consider not issuing a lease for a PRLA that meets final showing requirements. The principal purpose of this EIS is to develop stipulations and mitigation requirements that the applicant must consider in preparing his final showing. Thus, any other possible alternatives to mining the areas will be dependent on the results of the final showing.

There are two situations which could occur that would cause the areas to not be mined:

1. If the applicant failed to show that commercial quantities of coal could be economically produced on the Savery area, the PRLA would be rejected, a lease would not be issued, and the areas would not be mined.

2. If the applicant's final showing were successful, but sensitive values were identified, two possibilities could result;

    a. An exchange could be negotiated for either other minerals of comparable value in other areas or for future coal lease sale bidding rights in other areas.

    b. The Secretary, lacking any other authority to protect the environment, could request the Congress for legislation to purchase the applicant's interests.

Either of these possibilities could result in partial or total exclusion of mining.

By addressing the No Development Alternative and the Development Alternative, the EIS will cover any resulting variation of impact levels between and including the extremes.

Alternatives Identified But Not Further Considered

The alternative of development of some smaller portions of the PRLAs (i.e., less than all eight PRLAs) was identified. No such alternative was suggested in the initial showing, nor was it identified in the BLMs land-use planning decisions or in the analysis in this EIS. The initial showing on all eight PRLAs was approved by the Minerals Management Service. Entitlement to a coal lease will be determined by the applicant's ability to demonstrate commercial quantities on all applied PRLAs. Having no basis to define the exact parameters of this alternative, it was not further considered. It should be noted that the analysis does consider a range of potential coal production based on a range of potential mining areas as identified in the initial showing.

Preferred Alternative

The No Development Alternative is the BLM's preferred alternative.

CHAPTER 2

AFFECTED ENVIRONMENT AND ENVIRONMENTAL CONSEQUENCES

INTRODUCTION

This chapter contains the description of the Affected Environment and Environmental Consequences, including cumulative impacts. BLM's ability to mitigate impacts would be limited because the proposed mine would be a subsurface operation with surface facilities on private lands. The mine would cause significant impacts offsite, but these impacts would result from human population influxes and community growth over which the company would have little control and BLM would have little authority to stipulate through a coal lease. Control of community expansion is, for the most part, the purview of state and local government, not the federal government. All of the anticipated significant impacts of mining the federal coal are discussed in this chapter. Geology and minerals, socioeconomics, hydrology, wildlife, recreation, and transportation would all be significantly impacted. Resources not discussed were not considered to be significantly impacted: prime or unique farmlands, air quality, threatened and endangered plants, visual resources, wilderness areas, soils, vegetation, areas of critical environmental concern, wild or scenic rivers, and cultural resources. The analysis (Savery PRLA Site-Specific Environmental Report) conducted for resources not significantly impacted is available for public review at the Rawlins District office or the Craig District office of the BLM.

Prior to taking any federal action on a mine plan, the Office of Surface Mining, in consultation with BLM, USFS, and the appropriate State Historic Preservation Officer, will identify areas within a proposed mine plan and adjacent areas that have a potential for receiving direct or indirect impacts on historic and cultural properties (determined pursuant to 36 CFR 800.3). The Office of Surface Mining, with concurrence of the appropriate State Historic Preservation Officer, will ensure that intensive field inventories have been, or will be, completed on the mine plan and adjacent areas before it recommends approval of a mine plan. A report of the cultural resource inventory will be submitted to BLM and the U.S. Geological Survey. In the event of a failure to reach an agreement with the appropriate State Historic Preservation Officer regarding the appropriate inventory, the Office of Surface Mining will request council review in accordance with 36 CFR 800.6 (Memorandum of Agreement).

Because the Savery project is proposed as a subsurface mine with minimal surface disturbance, reclamation was not considered a significant issue and is, therefore, not discussed in this EIS.

GEOLOGY AND MINERAL RESOURCES

Introduction

Coal resources, oil and gas, and geological hazards are pertinent to the environmental analysis of the Savery project. There are no other known valuable mineral resources in the immediate area. However, this area has potential value for uranium production.

Coal

Introduction

Coal data was based on the initial showing by Kemmerer Coal Company (now Gulf Oil Corporation) that was filed with BLM in 1979. The data was derived from 47 exploratory holes drilled under federal prospecting permits issued in 1966 and 1967 and extended in 1972 for two additional years. This data was supplemented with other available data. Other mineral and geologic information are from the geologic literature and the BLM resource data base maintained in the Divide Resource Area office (Rawlins, Wyoming) and the Little Snake Resource Area office (Craig, Colorado).

Affected Environment

In the Savery project area, coal beds range from 1 to 22 feet thick, with as many as 15 beds at least 4 feet thick and 6 beds at least 5 feet thick. These beds occur in the Mesaverde group of formations, particularly the Williams Fork Formation in Colorado and the Almond Formation in Wyoming. (Specific coal reserve information for the PRLAs, as supplied by the applicant, is presented in Table 2.) Within the PRLAs, however, there are areas where coal reserves have not been demonstrated. No specific data is available on coal reserves for private and state lands.

Coal in the area is classified as bituminous to subbituminous coal in rank (Ball and Stebinger 1910; Hatch and Barclay 1979). Average as-received analysis of the coal shows that it contains 6.61 percent ash and, 0.58 percent sulfur, with heating value of 10,359 Btu's (Ball and Stebinger 1910). Lucksinger Mine, a small coal mine limited to local use, is located in Section 18, T. 12 N., R. 88 W. Also, there are an additional eight coal mines in this area that have operated at various times in the past.

Environmental Consequences

Development Alternative. Under this alternative, a portion of the coal reserves would be mined and used to produce energy at some other location. The coal reserve base at the south and southeast areas would be reduced by an estimated 184 million tons (based on a sustained annual production of 4 $\overline{M}$TY for 46 years). The coal reserves in the north area would be reduced by an estimated 108 million tons (3 $\overline{M}$TY for 36 years). Based on the Development Alternative, the mining method proposed in this area probably would recover about 50 percent of the in-place coal reserves for a maximum recovery of approximately 292 million tons of coal. This recovery rate is typical of room and pillar type underground mining. It should be noted that Gulf Oil may use a combination room and pillar/longwall system as a mining method. This method could yield extraction of 10 to 35 percent more of the coal reserves.

Additional potential impacts associated with development of an underground mine are subsidence, coal fires, and mine accidents. The degree of subsidence is dependent on the mine depth, integrity of the overlying rock, and amount of support left in the mined-out areas. Subsidence would be an important factor in mine design and could be more accurately predicted and, if necessary, mitigated when a mine plan was later developed and submitted for approval by the states of Wyoming and Colorado.

Subsidence studies show that the mode of subsidence depends on a number of factors, many of which are not known or not included in the data submitted, at the time an initial showing for a preference right lease application is made. Important factors include the physical layout of mine workings, physical and structural character of the overburden, proximity of workings to the coal outcrop, and direction of dip of the coal bed relative to its outcrop (Dunrud 1976).

Because of the concern expressed over the potential impact of subsidence, we have relied on some empirical methods for estimating subsidence. It is important to remember that the parameters used for the Savery project are based on the initial mining configurations presented in the initial showing document. These configurations are generalized but do provide some idea of the design of the mine.

It is important to separate subsidence from subsidence damage. Although the actual lowering of overlying material can be damaging, most subsidence damage to the overburden and surface results from horizontal strain produced by differential vertical settlement of the mine overburden. Surface fractures or breaks are also a potential problem that result from vertical movement and horizontal strain. These potential impacts are discussed below.

One useful way to look at maximum strain is to utilize empirical relationships that have been developed through field observations. Brauner (1973) states:

$E_M = a\ S_m/h$

where

E_M = maximum horizontal strain
a = a constant (empirical)
S_m = maximum subsidence
h = depth to workings

For a wide range of coal mining areas, the constant "a" has been found to range between 0.80 and 1.20. The relationship between mined depth and maximum subsidence is:

$S_M = bM$

where:

S_M = maximum subsidence
b = an empirical constant
M = mined thickness

The value of the parameter "b" depends strongly on be mining method. For high extraction ratio mining, it may be as high as 0.90, and for room and pillar with storage (backfill), it may be very small. A value of 0.50 is considered appropriate for many backfilled room and pillar operations (Brauner 1973).

The method of mining may be room and pillar with pillar robbing or longwall methods, so a conservative value for "b" of 0.90 has been used. The maximum mined thickness for the Savery project is estimated to be 20 feet over areas where two seams averaging 8 to 12 feet in thickness are mined. This would indicate a maximum subsidence of 18 feet.

Another empirical method for estimating maximum subsidence takes into account depth to workings and angle of dip (General Institute of Mining Surveying 1958):

$$S_M = \frac{25M \cos(\text{dip angle})}{25 + \sqrt{h}}$$

For the Savery project, a typical dip angle is 6 degrees. Depth to workings ranges from 200 to 1,000 feet. Using the above formula, maximum subsidence ranges from 8 to 12 feet or 10 feet on the average.

To estimate horizontal strain, an average value for "a" of 1.00 is assumed. This results in horizontal strains ranging from 1 to 9 percent. The effects of this range of strain would depend on the ability of overburden and surface features to tolerate the strain.

A primary fear of surface users when considering subsidence is that sudden displacements will occur, leaving ruptures in the surface terrain after subsidence occurs. Brauner (1973) notes that this is unlikely in conditions where the ratio of S_M/h is less than 0.01.

For the Savery project, this ratio ranges from 0.01 to 0.09, so surface rupture is of concern in this case.

The above analysis reaffirms that consideration of subsidence will be an important factor in mine design and can be more accurately predicted and, if necessary, mitigated when a mine plan is later developed and submitted for approval by the respective state governments. By planning the sequence of extraction, surface effects can be minimized and, where necessary, coal can be left in place to protect sensitive surface features. The state of Wyoming (Rules and Regulations, Department of Environmental Quality, Land Quality Division 1982) has established very specific requirements on mine permit applicants in order to evaluate, control, and, where necessary, limit the impacts of mine land subsidence. These requirements include an analysis of the effects of subsidence, plans for subsidence control, specific environmental protection performance standards, provisions for public notice, and surface-owner protection. As Dunrud (1976) states, "The studies clearly reveal that the geology of the coalbeds and overburden strata in a proposed mining area should be accurately known in advance of mine planning so that the mine can be designed in harmony with the physical surroundings. Such an approach is highly desirable in planning mines in one coal bed, but it is vital in multiple-bed mine planning if hazards to life, property, and the environment are to be reduced to a minimum."

Conclusion

The Development Alternative would deplete the coal resource in the project area by up to 292 million tons, based on the maximum mining assumptions. Subsidence would be a potential impact with a gradual and long-term effect, which would not be predicted until mining plans were developed. The No Development Alternative would leave the coal reserves in place but available for future use.

Oil and Gas

Introduction

Coal development could conflict with oil and gas development. This discussion does not indicate that there would be significant conflicts with oil and gas development, but special consideration should be given in the final showing to avoid conflicts.

Affected Environment

Oil and gas leases have been issued throughout the Savery project area. Most of the current production is gas. The principal producing formations are in the Mesaverde group. The Savery oil and gas field, a known geologic structure that was discovered in 1971, is located in Sections 9 through 17 and 21 through 24, T. 13 N., R. 89 W. The Dome gas field, located primarily in Section 13, T. 12 N., R. 89 W., contains located gas at a depth of between 2,492 to 2,540 feet and 3,110 to 3,140 feet. The well is currently shut-in because of a lack of marketing facilities. The Focus oil field, located 2 miles east of the southern part of the Savery project, occupies various sections of T. 12 N., R. 87 W.

Environmental Consequences

Development Alternative. Under this alternative, the potential exists for oil and gas development to conflict with coal development. Where wells have been developed or are proposed to be developed in structures below the coal, mutual agreement between the coal and oil and gas developers would have to be reached, based on rights established by each party.

No Development Alternative. Under this alternative, no conficts are foreseen.

Conclusion

The potential exists for coal development to conflict with oil and gas activities. However, no specific conflicts have surfaced. If conflicts surfaced, they would have to be resolved at that time.

Geological Hazards

Some normal faulting and slumping are known to exist within the geological structures near or within the Savery project area. The Geological Survey of Wyoming has provided a map showing the location of faults in the study area. There is a possibility that some of the faults may be reactivated naturally or through manmade processes (blasting etc.) and as such constitute a potential hazard.

SOCIOECONOMICS

Introduction

Energy development would create significant socioeconomic impacts to communities in the proximity of the development site as well as to larger, service-oriented communities located some distance from the area. Impacts could result from an influx of people attracted to the area by employment opportunities, which would cause a proportionate increase in the demand for community services, housing, medical care, etc. In areas unprepared for rapid economic growth, these impacts would bring about hardships to the social and economic structure of communities.

This section is designed to outline the social and economic characteristics of the affected communities and the consequences brought about by each alternative. Those components of the local and national economy that would be slightly affected or not affected at all are excluded from this discussion in order to more clearly outline the relevant issues.

Social and Economic Characteristics

Introduction

The Development Alternative would directly affect the social and economic structure of communities in the Little Snake River Valley located west of the Medicine Bow National Forest. These communities include the towns of Savery, Dixon, and Baggs, Wyoming, and Slater, Colorado. To some extent, the communities of Rawlins and Wamsutter, Wyoming, and Craig, Colorado, would be affected also. Rawlins and Craig are relatively large population centers and function as trade centers for the smaller towns in the area. The following discussion describes the social structure and economy of the affected communities and is followed by an analysis of the impacts associated with mine development.

Affected Environment

Savery (population 25) is a small, unincorporated town located on the western edge of the Medicine Bow National Forest in the Little Snake River Valley. The predominant lifestyle is that of a small, ranching community. Except for a general store and post office, no other services are available.

Dixon (population 82) is located 14 miles west of Savery and, although primarily an agrarian economy, is noticeably larger than Savery and is incorporated. A variety of services are available in Dixon; however, many people travel to Baggs, Wyoming, or Craig, Colorado, to shop.

Baggs (population 430) is the dominant community in the valley. A multigrade school (grades kindegarden through 12) is located there as well as various other services characteristic of a town this size. Lifestyles and attitudes vary with occupational status. Health services are offered through a satellite clinic operated in Baggs, which is staffed by one medical technician. Major health needs are met in either Rawlins, Wyoming, or Craig, Colorado.

Slater, Colorado, (population 15) is a small, unincorporated town located approximately 10 miles southeast of Savery. Today, the town consists of a small trailer park, a post office, and an RV park. The town serves passing tourists as well as the surrounding ranching area; however, most services are sought in Dixon or Baggs.

In general, housing is relatively scarce throughout the Little Snake River Valley. Employment associated with oil and gas activity west of Baggs has eliminated much of the available housing in Baggs and Dixon, and Savery does not have any available residential units.

There are an estimated 21,000 acres of private land that have potential for residential and commercial development in the Little Snake River Valley area from Baggs to Slater. (These areas are shown on Map 7.)

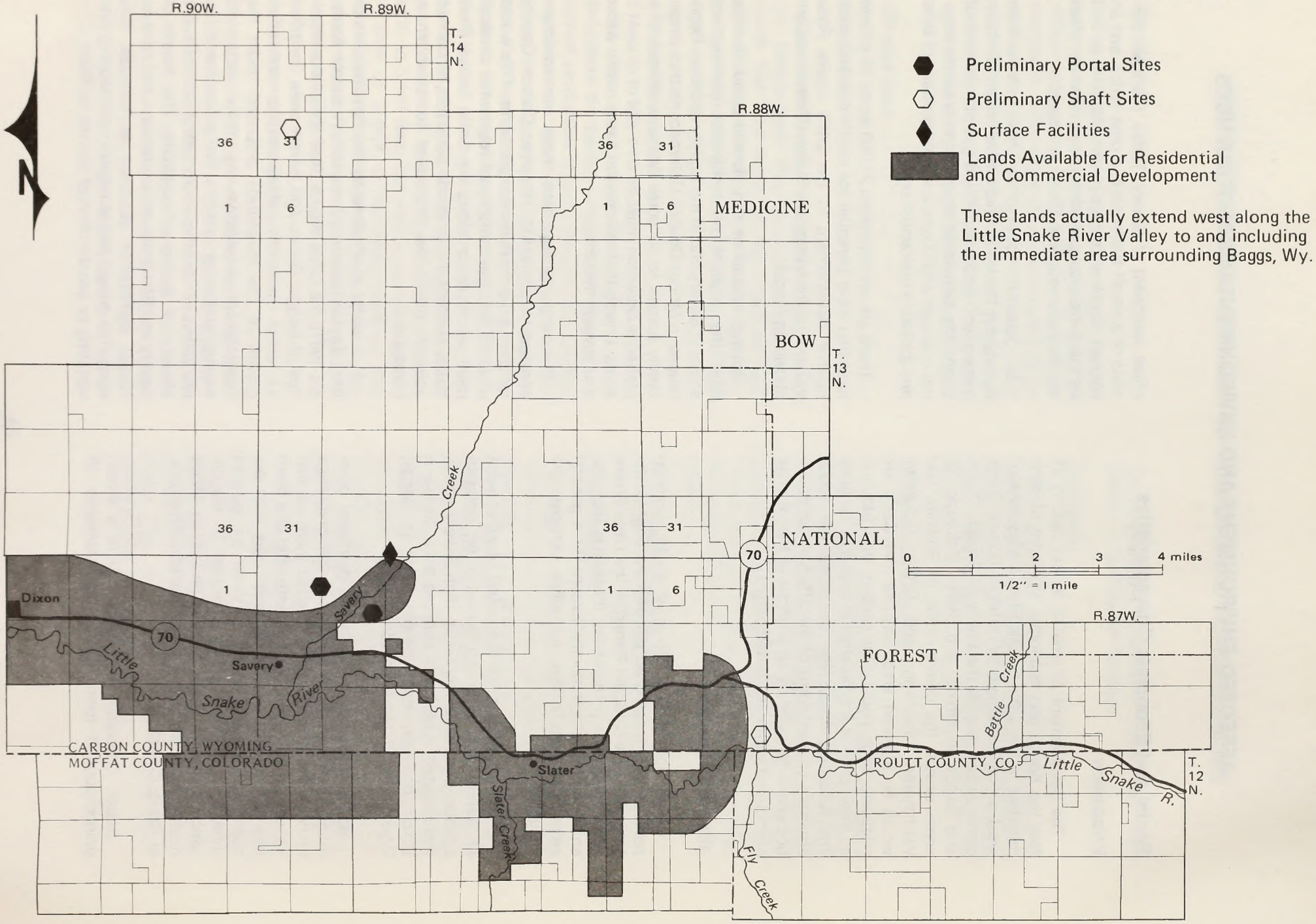
Zoning regulations in Colorado could severely limit the amount of residential development south of Savery and in the vicinity of Slater. Regulations in Moffat County, Colorado, restrict single family homes to 35 acres or more. Homes in a platted subdivision must be on a plot of at least 5 acres, unless that subdivision has a public water and sewage system.

Wyoming zoning laws have no minimum acreage requirements; however, Carbon County requires a 1-acre minimum per home. This would indicate that the majority of residential development would occur along the Little Snake River Valley north of the Colorado state line, since less acreage would be necessary to establish a homesite.

In a recent study done by the Rawlins District BLM (Divide Resource Area, Unit Resource Analysis 1981), the Little Snake River Valley communities of Baggs, Dixon, and Savery were identified as areas incapable of absorbing population growth of the magnitude proposed under the Development Alternative. In many instances, sewage and water systems, law enforcement, fire protection, and other community services are already at or beyond capacity. The towns of Savery and Slater are unincorporated and have no formal community structure or services. Any economic growth would require new housing and updating or construction of service facilities.

Map 7

LANDS AVAILABLE FOR RESIDENTIAL AND COMMERCIAL DEVELOPMENT



These communities do not have large outside revenue sources regularly available to them; however, several communities have obtained federal and state grants for capital expenditures in recent years. Recent bond issues have obligated most of the available bonding capacity of these communities; therefore, outside assistance would be required for any major expansions. Availability of federal and state grant and loan funds would be essential to the further expansion of community facilities in the event of a future rapid growth in population.

Rawlins, located in south-central Wyoming, is a city of approximately 11,485 persons (1982) and is the largest city in Carbon County. It is the county seat and functions as the regional trade center for many retail services. Rawlins' economy is supported by resource development activities such as ranching, uranium, coal mining, and oil and gas exploration and production. Other basic economic activities in Rawlins include the operation of the state penitentiary, tourist facilities, and retail businesses. Rawlins also functions as a crew change point for the Union Pacific Railroad.

Health facilities are adequate, offering services ranging from counseling and mental health to surgical specialties. A 90-bed nursing home is also available.

The city's educational system is adequate, providing a high school, middle school, and several elementary schools, each of which would accommodate a growing community. Recreational facilities are available, and the city's sewage, waste disposal and water systems, and police and fire protection are adequate for a total population of approximately 15,000.

Craig, Colorado, (population 12,258) has already gone through significant energy-boom growth and social change. In the last 2 to 3 years, the town has largely caught up with the effects from its 1970s boom. Shopping facilities are complete; formal mental health, social welfare, medical, law enforcement, and other human services systems are in place and functioning, though there is still some problem in providing a full range of medical services. With completion of the two new school buildings in the fall of 1981, school capacities are sufficient for considerable growth (up to about 1,000 new students). Recreational facilities are improving as efforts are made to provide more variety and space. However, this remains an area of concern, particularly for youth and young, single workers. Craig seems to be in a state of fairly good social equilibrium at the present and should be able to absorb new growth as it occurs, if it does not occur too rapidly.

Housing is currently available in Craig, both as sale and rental units. In addition, numerous mobile home lots have been developed, offering space for a more transient population.

The town of Wamsutter, Wyoming, (population 682) is identified as a potential settlement area for families associated with the Savery project. Although Wamsutter is located some distance from the mine site, it is possible that workers would move their families there for available housing. A county road connects the town with Wyoming State Highway 789.

Wamsutter's housing availability fluctuates because of the transience of a percentage of the population. Mobile home lots are now available as well as residential lots for several dozen homes.

For purposes of comparison, 1980 census figures for the affected communities are shown in Table 3 and supplemented with baseline forecasts to the year 2028. Table 4 shows employment and income statistics by sector for each affected county.

Carbon County's economy is heavily dependent on the coal market. In 1980, over 34 percent of the county's labor force was employed by mining, of which coal was a significant part. This reflects the magnitude of revenues and jobs that are associated with the coal industry.

Moffat County is not quite so dependent on coal. Fourteen percent of the labor force is employed in some aspect of mining.

TABLE 3

BASELINE POPULATION STATISTICS AND FORECASTS

	1980[1]	1987	1992	1999	2028
Carbon County	21,896	21,093	21,472	22,974	39,975
Rawlins	11,547	10,554	10,861	12,284	21,374
Baggs	433	417	424	453	788
Dixon	82	79	80	85	147
Savery	25	33	39	48	83
Sweetwater County	41,723	50,755	57,283	66,393	104,133
Wamsutter	681	812	916	1,062	1,666
Moffat County	13,129	17,476	20,877	25,663	45,448
Craig	12,258	16,302	19,475	23,939	42,395
Slater	15[2]	18[2]	20[2]	22[2]	24[2]

[1]U.S. Department of Commerce, Bureau of the Census.

[2]BLM, Rawlins District office estimate.

Note: 1987 through 2028 forecasts are from Wyoming Department of Administration and Fiscal Control and BLM Rawlins District estimates.

TABLE 4

EMPLOYMENT AND INCOME STATISTICS (1981 and 1982)

	Employment	Personal Income (thousand)
Carbon County[1]		
Mining	3,091	94,192
Construction	901	18,462
Trade	1,629	19,214
Services	1,341	12,931
Other	4,176	66,603
Sweetwater County[1]		
Mining	6,294	160,102
Construction	2,729	65,207
Trade	3,859	41,079
Services	2,359	35,698
Other	5,320	83,417
Moffat County[2]		
Mining	720	25,098
Construction	500	13,229
Trade	1,360	17,456
Services	560	7,853
Other	2,010	32,411

[1]Wyoming Income and Employment Report, third edition, Department of Administration and Fiscal Control, Cheyenne, Wyoming. May 1981.

[2]BLM, Craig District office, Craig, Colorado. January 1982.

Figures 3 and 4 show coal production trends that have occurred and are expected to occur. These production levels are based on projected contracts developed by the Geological Survey of Wyoming. Population trends reflecting coal production patterns are shown in Table 3. These trends assume no further federal coal leases.

In recent years, western coal has become increasingly important to the U.S. economy. The Clean Air Act of 1970 (and subsequent amendments) placed this coal high in industrial demand because of its low sulphur content. Although this act may be amended to relax air quality standards, this will not impact demand for Wyoming and Colorado coal, since the coal industry anticipates a favorable outlook for regional coal in foreign markets. This market should remain viable into the foreseeable future.

Social Conditions

This section uses information from the Green River/Hams Fork Regional Coal EIS (BLM 1980).

The Savery area has throughout its history been both rural and isolated. The towns have been rural trade centers rather unlike their

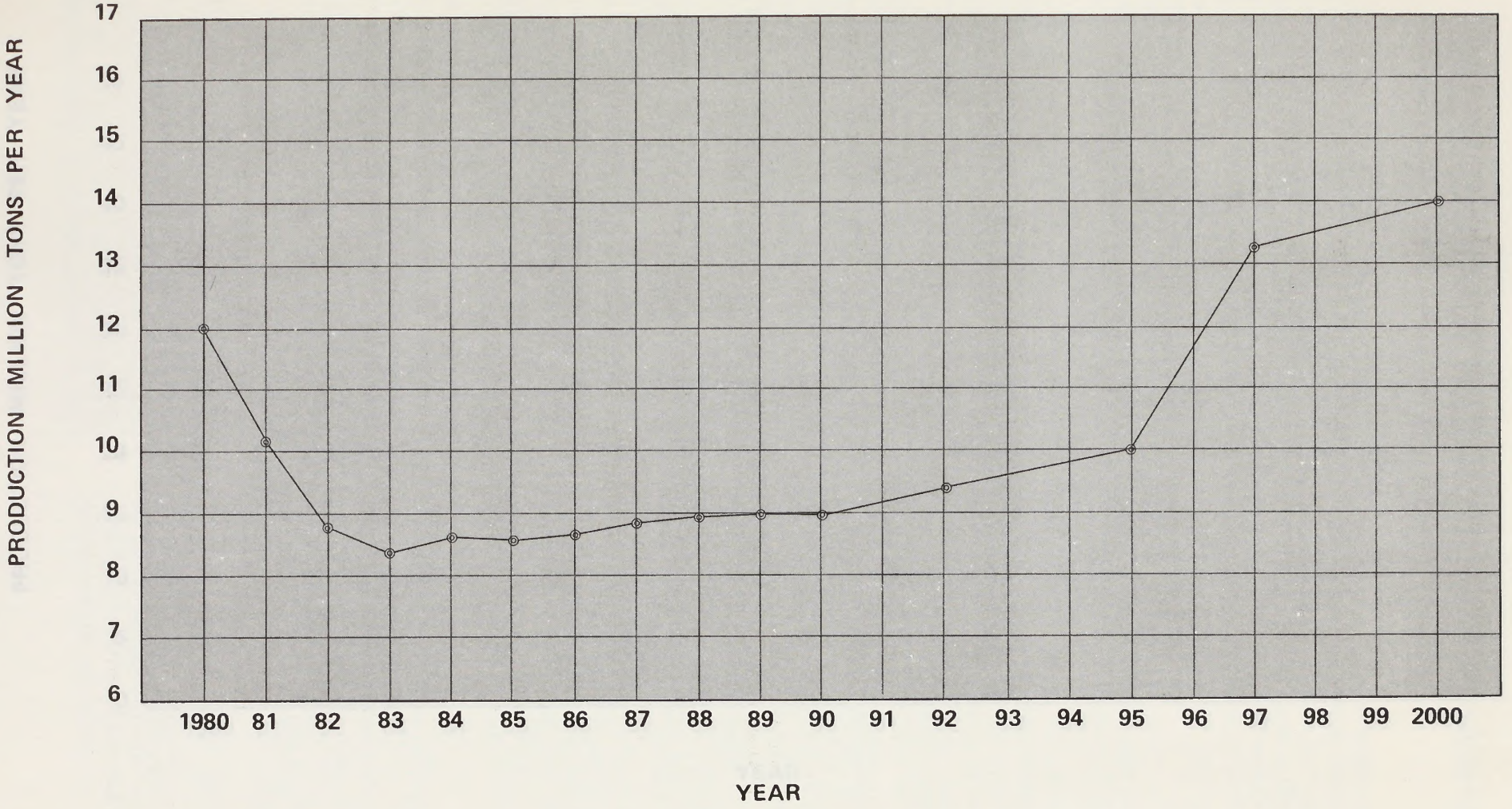


Figure 3
COAL PRODUCTION
CARBON COUNTY, RAWLINS DISTRICT

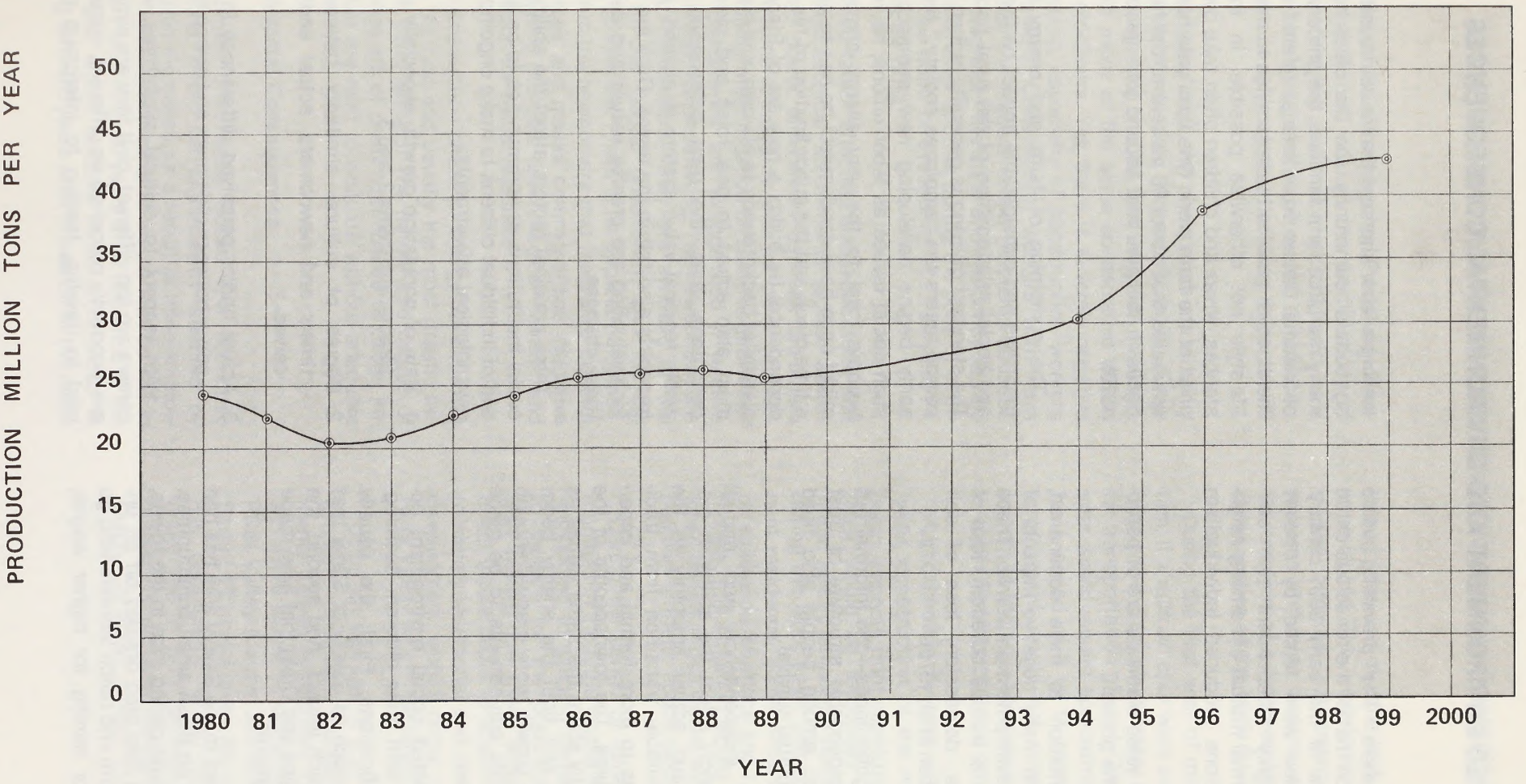


Figure 4
COAL PRODUCTION
SOUTHERN WYOMING

counterparts elsewhere. The prevailing value system is founded on that of the tenacious cattle and sheep ranchers of the early 20th century. These ranch families were forced by circumstances to be highly independent and self-sufficient, with informal mutual aid among neighbors. These conditions produced individualism and conservatism.

Two conservative value elements are of particular importance to the present:

1. The strong orientation to male dominance, which results in many negative impacts of energy boom development on women. These negative impacts include boredom, loss of career pursuits, depression, loss of self esteem, etc. (Moen et al. 1979).

2. The value of neighborliness—the informal but by necessity dependable structure of trust and helpfulness among people who need each other for mutual survival.

The images of independence and mutual neighborliness strongly affect the ability of old-timers to accept and adjust smoothly to the shocks of the inevitable transition from traditional, rural patterns to more formal and impersonal social structures. The townspeople of the Savery area generally share the same values as the rural dwellers, and until the energy boom began, change and growth were gradual enough for predictability-of-life adjustments to be made comfortably.

The present affected social environment occurs at two levels, with quite different sociological baseline ramifications. First, the usually small communities such as Savery or Slater that have not yet felt much impact. And second, the towns such as Rawlins and Craig that have made boom growth adjustments.

Energy development in the Savery area has had at least two effects on these small communities. As is true for the lower-paying jobs in the towns, energy development has also drained off an unknown number of farm and ranch laborers who go into construction or mining for higher wages, leaving a labor shortage that is detrimental to the agricultural community. On the other hand, for many marginal farm families, the primary source of income comes from energy related employment, which enables these families to maintain a life-style not otherwise possible. In these instances, wives and children often take over most or all of the farm work. One farm wife near Craig estimated that about 90 percent of the farm husbands in the area had second jobs (Moen et al. 1979).

The combining of farm and energy employment has had considerable impact on the values and social relationships of the rural population. The standard of living is generally higher; when a person enters the "employee society," he necessarily begins developing new perspectives on such social issues as labor unions; he tends to become loyal to the very energy company he might once have condemned; he has to adjust to a time clock and the subordination of his own independence; he builds a new set of friends with dissimilar backgrounds to his own; and his family must also adjust to new roles and old-role redefinitions. thus, the rural cornerstone of the whole regional value system is shaken, and the impact is also felt in the towns. Data are lacking for evaluating the precise nature and degree of these changes.

Three principal factors affect the ability of the social institutions of communities to be effective and of individual citizens to make ongoing social-psychological adjustments:

1. Rate of population growth, especially as it interacts with items 2. and 3.

2. Degree of cultural similarity between old-timers and newcomers, actual and/or perceived.

3. Actual and/or perceived differences in social power between old-timers and newcomers.

With respect to cultural similarities, if newcomers are too different, or if they are similar but are incorrectly perceived as different, stereotypes tend to develop, leading to intergroup conflict

and social-structural weakening. Perceived differences, real or not, weaken the predictability of life, often bringing about avoidance behavior as a defense; the greater the perceived differences, the more strongly negative the initial impacts will be.

In the Savery area, the newcomers are virtually all from the same race, geographic region (Colorado or adjoining states), and religious heritage, and hold many of the same conservative values as the old-timers. Yet, there is severely negative stereotyping, especially of construction workers by old-timers. Construction workers both have and cause the biggest social problems because of their migratory life-style and residency in one boom town after another during the peak of activity and low point of availability of . . . services . . . (Moen et al. 1979)

The third factor affecting social-structural and social-psychological adjustments (actual and/or perceived power differences between old-timers and newcomers) interacts with the other two factors, causing magnification of some negative elements. Stereotypes are exaggerated if relative power is seen as threatening. The newcomers are not just newcomers—they are symbols of the power of the federal government and the big energy companies. There is an apparent displacement onto the newcomers that magnifies cultural differences and masks commonalities. Negative stereotyping provides psychological comfort and justification for social rejection.

The construction phase of energy development makes the first and usually the most drastic impact on communities. The nature and degree of transience are of great significance to social impacts but are hard to evaluate without adequate data.

Environmental Consequences

Development Alternative. Social and economic conditions would be significantly affected by population increases as a result of mine employment. These direct impacts would first be felt in the short term (1 to 20 years after issuance of the lease) and would become most pronounced in the long term (20 years after issuance of the lease through the end of mine life), especially after the mine closed. The impacts would occur from population influxes, settlement, and resettlement patterns and mine closure, which would lead to the creation of a boom-and-bust situation in the communities of the Little Snake River Valley.

During the first year of mine facility construction, if a railroad spur were built, it would be built from either Creston Junction or Craig to the mine for transportation of coal. Construction of the rail spur would require approximately 300 employees for a period of 9 to 11 months. This temporary employment would not constitute a significant impact to the area because workers would reside in either Rawlins or Craig or live on a work train.

Approximately 3 years after issuance of the lease, construction of the mine facilities would begin. Impacts from construction related employment would be temporary in nature. Workers would live in temporary housing near the project during the work week and commute to a permanent residence, some distance from the project, on weekends (Murdock and Leistritz 1979). Nevertheless, this situation would create an impact to small communities where services and temporary housing or trailer space would be limited.

During the period of mine construction, communities in the Little Snake River Valley would be responding to existing demands and attempting to prepare for the population growth resulting from mining operations employment. Land developers would begin to acquire land in an attempt to satisfy residential and commercial needs. This development would occur in the Little Snake River Valley on private lands (Map 7).

Using an average of 0.10 acres per person to estimate adequate standard of living requirements (Green River/Hams Fork Final EIS 1980), 385 acres would be disturbed in the Little Snake River Valley (Baggs, 252 acres; Dixon, 71 acres; Savery, 62 acres) under the 4 $\overline{M}$TY scenario. Acreage disturbance would increase substantially under the 7 $\overline{M}$TY scenario, requiring approximately 700 acres in the valley (Baggs, 454 acres; Dixon, 129 acres; Savery, 111 acres).

Most residential and commercial development would occur in the proximity of established communities. However, evidence exists that some individuals prefer rural life-styles and would build or purchase a home outside of a community's limits.

In the short term (1 to 5 years), because of housing and service constraints in the Little Snake River Valley, many of the people associated with mine operations would be forced to reside in the major trade centers of Rawlins and Craig, a distance of 93 and 62 miles.

Over a period of 5 to 10 years after mine construction, housing supply in the Little Snake River Valley would grow to accommodate increased population from mining employment. The demand for housing in the Little Snake River Valley would be high, spurred by the excessive commuting distances from Rawlins and Craig. Community services, utilities, etc. would expand to meet the expected growth.

Both potential production scenarios (i.e., 4 $\overline{M}$TY and 7 $\overline{M}$TY would result in significant population impacts to the communities discussed, in both Wyoming and Colorado. The lowest level of impact would occur under the 4 $\overline{M}$TY scenario, which would add 4,760 persons to the region during the peak production years. The 7 $\overline{M}$TY scenario would add 8,568 persons to the region. Peak population levels in the Little Snake River Valley would approach levels similar to Craig. Direct, indirect, and induced employment; population increases; regional income; and housing and school needs are detailed for both production scenarios in Table 5. Information in this table does not include railroad construction employees.

The Savery project would be an underground coal operation so very little range grazing would be affected directly by mining. The major impacts to agriculture would result from commercial and residential development on the hay meadows in the valley and on those rangelands adjacent to the valley and above the meadows.

As the demand for land grows with added population, greater amounts of valley land could be taken out of agricultural production and sold to land developers. The land would probably be sold at residential or commercial land-market prices, resulting in a windfall for landowners.

Loss of hay meadows would force livestock operators to purchase hay elsewhere or reorganize their operations to use less hay. The level of agricultural production in the area might be reduced if operators got out of livestock and hay production and sold their lands.

As shown in Figure 3, coal production in Carbon County is down substantially from 1980 levels. If the Savery PRLAs delayed coal production in the tracts brought forward for the 1984 coal lease, the lack of further coal development near Rawlins and Hanna would aggravate the recession in both communities, at least until 1995. If another 5 to 7 years were added to include new-mine construction and permitting time, one could expect the recession in both Rawlins and Hanna to extend beyond the year 2000.

Coal production in northwestern Colorado is forecast to be 19.4 $\overline{M}$TY in 1985. No significant conflict is expected to these coal markets from the Savery project. Mining induced population increases in the Little Snake River Valley would also have an economic impact on recreation and wildlife revenues. Although exact figures are unavailable at this time, recreation user-days would increase at nearby sites. Conversely, wildlife numbers would be reduced in the immediate area as a result of human activity. Ultimately, this would affect community and state revenues obtained from hunting and fishing activities.

Social Conditions. Energy boom-town growth and problems are one variation of a long-term, worldwide pattern of population growth, human migration, and intercultural contact. Two general types of negative impacts connected to boom-town environments are: community social-structural change (or breakdown in severe cases) and individual social adjustment problems. At the personal level, individuals may turn inward (depression, alcoholism, suicide), or they may turn agression outward (crime, delinquency, child abuse).

TABLE 5

SOCIOECONOMIC IMPACTS[1]

	1987	1992	1999	2028
Four Million Tons per Year Production				
Direct employment	200	700	1,000	500
Total employment[2]	290	1,190	1,800	900
Population	613	2,993	4,760	2,380
Personal annual income (regional)[3]	$8,000,000	$35,000,000	$54,000,000	$27,000,000
Housing needs (units)	245	949	1,408	704
School enrollments	232	1,352	2,240	1,120
Settlement patterns[4]				
Rawlins	208	400	190 (1.5)[5]	---
Baggs	49	1,167	2,523 (556)[5]	1,547
Dixon	18	389	714 (840)[5]	452
Savery	12	329	619 (1,263)[5]	381
Wamsutter	12	30	---	---
Craig	306	628	714 (3)[5]	---
Seven Million Tons per Year Production				
Direct employment	200	1,000	1,800	1,000
Total employment[2]	290	1,730	3,240	1,800
Population	613	4,421	8,568	4,760
Personal annual income (regional)[3]	$8,000,000	$51,000,000	$97,000,000	$54,000,000
Housing needs (units)	245	1,371	2,534	1,408
School enrollments	232	2,024	4,032	2,240
Settlement patterns[4]				
Rawlins	208	619	343 (2.8)[5]	---
Baggs	49	1,742	4,541 (1,002)[5]	3,094
Dixon	18	580	1,285 (1,512)[5]	904
Savery	12	500	1,114 (2,273)[5]	762
Wamsutter	12	44	---	---
Craig	306	937	1,285 (5.4)[5]	---

[1]All figures represent increases as a result of mining coal on the Savery PRLAs, over baseline conditions for the years displayed.

[2]Includes all employment (direct, indirect, and induced) as a result of mining coal on the Savery PRLAs.

[3]Income is shown in 1981 dollars.

[4]Migration to communities in the Little Snake River Valley was calculated assuming a 9 percent growth in housing supply over a 10-year period.

[5]Numbers in parentheses represent the percentage change in population during peak production years.

Impacts from this alternative would be associated primarily with the rapidity of population growth and transience, exacerbated by actual and/or perceived cultural differences between old-timers and newcomers and actual and/or perceived changes in relative social power. Among these impacts would be:

1. Strains on social structures geared to quieter, more isolated cultural contexts and smaller, more homogenous populations, with many organizational and role modifications and replacements;

2. Disturbances to accepted value systems, with disruptions of predictability-of-life psychological realities;

3. Shifts in social power and political alignments, bringing about new forms of conflict, accommodation, competition, coordination, and cooperation, especially in decisionmaking at the community level;

4. Increasing formalization and bureacratization of social structures and processes having to do with community services delivery and facilities, and of secondary social interaction such as retail purchases, church activities, etc.;

5. Increases in personal stress indicators such as crime, school discipline problems, divorce, and mental health rates;

6. Increasing negativism and cynicism regarding the efficiency and responsiveness of various levels of governments; and/or

7. Overload on physical facilities, aggravating whatever other social and psychological strains might already exist.

With respect to particular subsets of persons, newcomers in general would often experience rejection by and lack of integration into their communities; transients, especially construction workers, would continue to be stereotyped negatively and treated accordingly; old-timers would suffer threat to or loss of familiar values and social processes; newcomer women, especially wives of transients, would be likely to experience lack of opportunities for social expression, intellectual and career curtailment, depression, frustration, etc.; newcomer children and youth would find difficulty in being accepted in school and play groups; the poor, retired, and others on fixed incomes would have greater financial pressures; businessmen in some instance would be unable to compete successfully in the new milieu; some farms, ranches, and businesses would lose low-paid employees to energy companies.

Thus, depending on rapidity of population growth, community social structures would be strained or disrupted, and the social-psychological functioning of individuals would be impaired or destroyed, at least in the short term. As the strange ideas and ways become the familiar, such disintegrative tendencies would be slowed and gradually reversed so that, even in the worst cases, these social needs would again be met. As this occurred, it would become clear that not all changes were negative.

No Development Alternative. This alternative presents two distinct options: (1) lease rejection from an unsuccessful final showing, and (2) exchange or other compensation for the lease rights. Each option will be discussed separately.

1. Unsuccessful Final Showing. Under this circumstance, the lease applicant has shown uneconomical coal reserves in the PRLAs. Exploration has shown that the coal is not of high enough quality or quantity to feasibly extract under present mining technology. In terms of the nation's economic well-being, this situation represents a loss to society, both as a potential employment source and as a contributor to Gross National Product, severence taxes, etc.

   The Little Snake River Valley area would continue its existence much as it has in the past. In the event of new coal mining technology, the coal could again be evaluated for its mining feasibility, and at that time, be reanalyzed for its impacts to the environment.

2. Exchange. Several methods are identified in Chapter 1 as being potential exchange or compensation choices. Although each is different in concept, all achieve identical ends: potentially serious adverse impacts are avoided while providing for an equal exchange or compensation for resource value.

The exchange or compensation proposal would generate several beneficial elements:

1. Conservation of an Asset. The coal in the PRLAs would remain available for future consideration in BLM's competitive coal leasing program and would appreciate in value as a nonrenewable resource. If the coal were conserved, it would be available to society when the demand for coal necessitated its extraction.

2. Employment. Although employment would be directed away from the PRLAs, it would not be lost. The labor force required by the company does not exist in the Little Snake River Valley. By exchanging for bidding rights of equal value elsewhere in the state or nation, the labor force would merely be employed in the area where the development would occur. This would resolve the rapid growth impact that would occur in an area incapable of coping with it.

3. Consistency with Rawlins District 1982 Land-Use 'Decisions. This alternative closely follows BLM's planning decision for the 1982 coal leasing in the Rawlins District. The decision calls for a north-to-south sequencing of coal leasing and development in the Divide Resource Area. Sequential development would best accommodate the economic growth potential of Carbon County, because it places the majority of population increases in areas that are currently capable of absorbing growth (e.g., Rawlins) and allows those communities farther south to expand their services and housing on a more gradual basis (e.g., Baggs, Dixon, and Savery). By sequencing the development, growth would occur in a more orderly fashion and prolong the economic viability of the area, thereby substantially reducing the potential for creating boom and bust cycles.

Social Conditions

Under this alternative, the social conditions of the area would not be expected to change from the existing situation.

Mitigation Measures

The following mitigation measures will be required by the state of Wyoming during the mine permitting stage. Additional requirements may be placed on the applicant by the state of Colorado. Because of the relatively limited scope of mine operations in Colorado, Colorado's requirements are not listed. Nonetheless, the applicant will have to comply with Colorado state and county laws and ordinances.

This list is not inclusive. Some additional requirements may be placed on the applicant by the state. (For a discussion of all requirements, see Industrial Development Information and Siting Act from the Office of Industrial Siting Administration, state of Wyoming.)

Socioeconomic Impacts of Construction and Operation. The applicant will describe the effects of the proposed project on the future social and 2 years past the point at which the facility will reach maximum permanent employment, or reach design capacity.

Construction Schedule and Estimated Construction Costs. The applicant will present a reasonable estimate of the proposed construction schedule for the facility under consideration, contingent on: (1) issuance of a permit by the Industrial Siting Council (council) after its initial hearing; (2) issuance of a permit by the council after an a remain available for future consideration in BLM's competitive coal leasing program and would appreciate in value as a nthe council after an additional study is made; (3) issuance of a permit after additional statutory extension to the additional study period is granted by the council; and (4) securing final action on other requirements. Commencement of construction will refer to the appropriate month and year within a time frame of 2 months. Relevant points during the construction phase will be identified. These points will include permitting, engineering, actual construction of the facility, expected start-up date, and when the facility is expected to be fully operational (design capacity). Factors that can serve to delay or alter that schedule will be discussed. Alternate schedules taking these

changes into consideration will be described, if available. Factors to consider are effects of adverse weather conditions or other events that can materially change the proposed construction schedule.

The application will include the total cost of construction of the proposed facility. This figure will be expressed in current dollars (as of the application filing date). The timing of these expenditures will be indicated at least on an annual basis. Costs will be broken down into the various components such as materials, labor, cost of money, contingency funds, etc. The applicant will designate those expenditures by fiscal year, which will be subject to sales and use taxes, and delineate the counties receiving the funds. Future and valorem taxes will also be calculated. This information is necessary to determine additional revenues that may be available to various government entities in the area of site influence as a result of the project.

Economic Effects of the Project. In describing the economic effects of the proposed project, the applicant will present detailed employment information related to both construction and operation of the proposed facility. Construction employment will be reported on a bi-monthly basis for the entire construction period. Operating employment will be reported at least on an annual basis, up to and including that time at which the facility will reach maximum employment or will be operating at design capacity. This information will be broken down by craft, where possible, and separated into full-time and part-time employment. If employment is expected to deviate from the reported numbers, the extent of any possible deviations will be discussed. An estimate of the number of construction and operating employees who will in-migrate into the area will be included with a justification of that estimate.

Special consideration will be given to groups such as bachelor quarter residents, whose effect on the local service sector will probably be less since many of the services they demand are provided within their living accommodations.

Additional income will accrue to the area in the form of wages paid to construction and operating employees of the applicant as well as to induced employees that will be necessary to provide services to the expanded population. Income related to the project will be calculated by multiplying the number of additional workers by the wages paid. This calculation will be presented separately for construction, permanent, and induced employment. Any information on area income multipliers, as well as expected income leakage out of the area as a result of residents purchasing goods and services in other localities will also be included.

Any other effects on the local economy because of the project will also be presented in this section. Potential benefits include increases in employment and income, a decrese in the area's unemployment rate, and increased employment opportunities for current and future residents of the area. Costs imposed by the project can include higher area labor costs, resulting from higher wages in the new activity and shortages of available labor locally to area employers, especially in the service sector. This may result in labor shortages, higher prices, and inadequate levels of services. Any mitigative actions proposed by the applicant to deal with problems associated with employment at the facility will be presented.

The applicant will present a detailed discussion of proposed local banking activities related to the project. This will include types of accounts and amounts in any local bank where these accounts will be held, monthly deposits and withdrawals to these accounts, and the average daily balances expected to be maintained. Known impacts to the banking community as a result of the project will be discussed. These can include additional demands for funds in what might be a tight credit market, special services demanded by the applicant or the applicant's employees, as well as any significant demands that might be required which cannot be met by the local banking community. Any mitigating actions proposed by the applicant to assist the local banking community to better meet the capital needs created by either the construction or operation of the facility will be presented.

Population. The project-related population that will reside within the area of site influence is normally considered a function of construction, operating, indirect and induced employment. Demographics used to describe the current population will characterize the projected population increase when feasible and practical. Additional characteristics may have to be taken into consideration for the applicant's direct employees. These may include: commuting patterns, marital status, family size, working spouses, dual households, migration patterns, and single-status housing. Each of these items will be discussed separately and in relation to temporal changes.

The applicant will include projections of total area population by local governmental units at annual intervals during construction and during the facility's useful life or 2 years after the operating work force stabilizes. Population at the peak employment period will also be estimated. These projections will include reasonable estimates of the population increase associated with other development likely to occur within the time frame under consideration. Net increases in population will be used throughout this section to determine incremental demands placed on socioeconomic variables (i.e., water consumption, dwelling units, classrooms, etc.).

Capital Facilities. Existing capital facilities and present and future capital facility needs without the influence of the project will have to be identified and evaluated. Evaluations of capital facilities in this section consider the population increase associated directly and indirectly with the proposed project.

The applicant will identify any measures to be implemented to ensure that area capital facilities are not significantly impaired as a result of construction or operation of the proposed facility. The project may necessitate certain mitigative measures that may involve either the private or public sector and may entail temporary or permanent facilities. Mitigative measures in the private sector may consist of direct actions by the applicant or as a joint venture with local governments or other area industries or groups. For example, the applicant may coordinate with the medical community to assure that health services will be adequate during construction. Impact alleviation measures in the public sector may incorporate actions on the part of the applicant, local governments, state government, federal agencies, or joint ventures.

Contingency plans and measures will be presented, the relative efficieny of each discussed, and the sources of financing identified. Alternative management strategies that can be employed by the public sector will be discussed. Duration and costs of any alleviation measures, responsible entities, and funding sources will be fully delineated and incorporated into budget projections.

Administration. The applicant will make an assessment of future administrative facility, equipment, and personnel needs based on the anticipated population increase attributable directly and indirectly to the proposed project. This evaluation will include the timing of needed improvements, specific costs to be incurred, and identification of revenue sources. The applicant will identify any specific actions to be taken to mitigate the anticipated impacts on administrative facilities.

Sewage Treatment. The applicant will evaluate the capability of the existing sewage treatment and collection system to meet the projected increase in population because of the proposed project. Average and peak demand figures for sewage flow rates will be presented for each year until the population increase due to the project stablizes. If the evaluation reveals deficiencies, specific measures to mitigate these problems will be identified. These deficiencies can include the need for additional manpower, the need for additional capacity, timing, costs, and funding sources.

Water Treatment and Distribution. The applicant will determine if the existing source of water supply is adequate to meet the increased demands that will result from the proposed project. The applicant will also evaluate the adequacy of existing storage facilities and water distribution systems. If any deficiencies are identified, the applicant

will address specific measures that will be needed to correct these problems, including costs. Average and peak demand figures for water use will be presented for each year until 2 years after the project-related population stabilizes.

Solid Waste Disposal. The applicant will determine the adequacy of existing solid waste collection and disposal facilities to meet the needs of the projected population. If it is determined that the existing facilities will be inadequate, the applicant will identify specific measures, costs, and financial sources to mitigate these deficiencies.

Law Enforcement. A description of current law enforcement facilities and projections of future law enforcement needs without the project will have to be given. This section will emphasize the projections of future law enforcement needs with the proposed project. Additional costs for capital facilities and annual costs of new facilities or personnel due to the project will be presented in this section and included in the section on Government and Public Finance.

The applicant may utilize law enforcement personnel or security guards at some on-site facilities. If so, the facilities or personnel and their functions will be described.

Fire Protection. Current fire protection facilities within the area of site influence and future needs without the project were identified previously for the baseline description. This section will emphasize future needs with the project. These needs will be based on the standards established by the Board of Fire Underwriters. Capital and annual costs for improvements and facilities will be presented in this section and in the section on Government and Public Finance.

The applicant may provide fire protection facilities at the project site. If so, the facilities or equipment to be utilized will be described in this section.

Health Care Facilities and Personnel. This section will include an analysis of any personnel shortfalls and facility deficiencies attributable to the population increases associated with the proposed project. Plans for meeting these needs will be identified. The costs of these proposals along with methods for financing them will be provided. Any measures the applicant intends to implement to mitigate anticipated impacts on area health care services will be specified, including any on-site ambulance and nursing services.

Recreational Facilities. The applicant will make an assessment of future recreational facility needs based on the anticipated population increase attributable to the proposed project. This evaluation will include the timing of needed improvements, specific costs to be incurred, and identification of revenue sources. The applicant will identify any specific actions that the project intends to take to mitigate anticipated impacts on recreational facilities within the area of site influence.

Library Facilities. The applicant will make an assessment of future needs for library facilities, materials, and personnel, based on the anticipated population increase attributable directly and indirectly to the proposed project. This evaluation will include the timing of needed improvements, specific costs to be incurred, and identification of revenue sources. The applicant will identify any specific actions that the project intends to take to mitigate anticipated impacts on library services.

Housing. The applicant will estimate the total housing needs within the area of site influence with the project. Special attention will be given to the applicant's construction and operating personnel and families and the service sector population associated directly or indirectly with the proposed facility. The previous section on housing inventoried the current number of dwelling units by type and the plans of local developers to produce new units. Therefore, the applicant will be able to conclude whether or not the private sector has the capacity to respond to total housing demand in a timely manner.

The proposed facility will create housing demands that may exceed the capacity of the private sector to respond. Therefore, actions on the part of both the applicant and the private sector may be necessary. The application will de-

scribe any actions or alternatives proposed by the applicant and will identify the types of units that may be involved, the time frame for development of each type of unit in any housing program, and the financial sources for alternatives. Special programs for the applicant's direct employees will be discussed, including employee camps, apartments, mobile home spaces, financing programs, land developments, etc.

Transportation. Impacts of the proposed project on transportation facilities in the area of site influence will be addressed. This will include any new roads, rail spurs, etc. constructed to serve the proposed facility. The entity responsible for operation and maintenance of any new transportation facilities will be indicated. This section will also address effects of increased usage of streets and roads as a result of expanded population in the area of site influence and effects of plant operation on various commerical carriers as a result of increased passengers, freight haulage, etc. Any other changes or additions to present public and private transportation facilities that are attributable to the project or to the increased population associated with the project, including any transportation program to serve project employees, will be described.

Mitigating measures to resolve any impacts will be discussed. The cost of these measures, the timing of needs, and responsible parties will be indicated. The source of funds for any proposed improvements or additions will also be identified.

Human Services. The population increase associated with the project will affect the demand for existing human services and may exacerbate the need for creating new services. The applicant will provide a comprehensive assessment of the project's effects on existing programs and on the needs for services that are presently lacking within the affected communities.

In evaluating the effects of the project on existing and needed programs, the applicant will consider the nature of the work force and the induced population associated with the project. For example, a construction work force of predominantly young, single males may utilize very different human services programs in contrast to a typical operating work force.

Because of the nature and size of the population associated with the project, new human services programs may be necessary to meet the needs of the project-related population. Since few standards exist to delineate thresholds for instituting new programs, the applicant will coordinate with state and local administrators or professionals of advisory agencies in the area of human services (e.g., Wyoming D-PASS, county-wide human resource task forces, mental health officials, etc.).

Deficiencies in human services attributable to the project-related population will be identified. Plans for meeting these needs will be described to include the timing of needed improvements, the costs of the proposals, and the financing methods. Any measures the applicant intends to implement to mitigate anticipated impacts on human services will be specified.

Educational Facilities. On the basis of the population increase associated with the project, an assessment of capital facilities and operating expenses will be conducted for each school district affected. The number of school children, the number and pay scale of personnel, the necessary facilities and their costs, and other relevant factors will be projected for each school year, beginning with the year prior to construction and continuing through 2 years past the point when the permanent employment stabilizes. This information will then be incorporated into annual budgets for presentation in the section on Government and Public Finance. The analysis will identify both short- and long-term costs and benefits of the proposed facility to the educational system within the area of site influence.

Mitigative measures may be necessary, depending on the capability of individual school districts to meet the demands caused by the increased population associated with the project. Proposed alleviation measures will be fully described and will reflect the type, location, and number of facilities, staffing, financing, the time

frame for implementation, and the ability of these measures to maintain or improve current service levels.

Government and Public Finance. The purpose of this section is to assess the impacts of the applicant's activities on the financial condition of the affected governments in the area of site influence. The capital and operating budgets of each of these units of government will be projected on an annual basis for the period, including the current year, the years prior to start of construction, and all years at least to 2 years past the point when the permanent employment stabilizes.

Projected budgets which take into account the effects of the project will be projected in a manner similar to that used in the baseline case. The previously derived employment, population, and household information related to the applicant's project will serve as inputs to the projection process.

The applicant will compute the Impact Assistance Payments, which will accrue to political jurisdictions within the area of site influence as a result of construction of the proposed project. These calculations will be made, starting with commencement of construction, to the point when the project is 90 percent complete. The applicant will notify the Office of Industrial Siting Administration when the 90 percent is reached.

If impact to adjacent counties is anticipated, the applicant will suggest what share of Impact Assistance Payments will accrue to those adjacent counties and municipalities affected. Included in this discussion will be an estimate of Impact Assistance Payments being made to those areas as a result of construction of other projects under the jurisdiction of the Industrial Siting Act.

Adding the effects of the project to the baseline information provides the information necessary to determine the expected future financial condition of the various units of government. These projected budgets (with the project), both operating and capital, can then be compared to the baseline budgets (without the project) to determine whether or not the proposed project is a net benefit or cost to the various jurisdictions in the area of site influence.

Impact Controls and Mitigating Measures. This section summarizes, preferably as a simple listing, the impact controls or mitigating measures proposed by the applicant to minimize adverse social and economic impacts associated with construction and operation of the proposed facility. Details of the mitigating measures have been presented under previous section headings.

Public Health and Safety. The applicant must present evidence to demonstrate to the council that the proposed facility will not substantially impair the health, safety, or welfare of present and future inhabitants within the area of site influence. The application must identify any potential health and safety hazards associated with construction and operation of the project, both to the general public and to employees. Health or safety hazards associated with emissions or discharges from the facility, development of transportation systems to and from the project site for both employees and facility products, etc. will be described in detail. Any procedures proposed to avoid endangering the public health and safety must be detailed. Agencies responsible for overseeing health and safety aspects of the project will also be identified. Any safety programs proposed for the construction or operational work force will be discussed.

Monitoring of Socioeconomic Conditions. There are limitations on the extent to which an applicant can evaluate all the social and economic benefits and costs of construction and operation of an industrial facility that may have a productive life of 30 years or more. Accurate demographic projections are key to assessing facility impacts and planning specific mitigative measures to deal with adverse consequences.

The uncertainties inherent in forecasting population changes and relating service needs require that the applicant develop a socioeconomic monitoring program in conjunction with proposed impact alleviation measures and contingency plans. Any program will be fully described and will be

capable of monitoring area socioeconomic variables and impacts, determining needs to trigger implementation of alleviation measures or contingency plans, and assessing the overall effectiveness of mitigative actions.

Reporting Schedules. The environmental and socioeconomic monitoring systems will identify reporting schedules. Annual reports will include environmental planning efforts not identified in the application and efforts to identify and minimize environmental problems. Other environmental reports may be ordered by the council to assure compliance with any permit conditions. Most of the socioeconomic statistics within the monitoring systems will be recorded on a monthly basis, but the reports can be published on a quarterly schedule. In this section, the applicant may wish to propose reporting schedules.

Conclusion

The Federal Coal Program plays a very important role in the economy of south-central Wyoming. Altering this role would create significant social and economic hardships to those communities that would be affected both by PRLA development and a reduction in the competitiveness of the coal program.

The alternative that best serves the needs of society with the least amount of adverse impact is the No Development Alternative. Within this alternative, the exchange or other compensation proposal is most optimal when consideration is given to several issues.

1. The coal in the PRLAs continues to be an asset to the nation's resource stock.

2. The socioeconomic impacts are avoided in an area unable to cope with rapid population growth.

3. Competition among bidders is reintroduced into the marketplace.

4. The potential coal lease tracts for the 1984 coal lease sale are the more desirable areas to develop.

WILDLIFE

Direct impacts to wildlife habitat and animal populations resulting from the surface facilities would be minimal. Approximately 175 acres of cottonwood-riparian and sagebrush mixed grassland habitat, which are under private surface-federal mineral ownership, would be altered throughout the life of the mine. Additionally, road kills of various wildlife species, especially mule deer and raptors, would increase as a result of increased vehicular traffic on Wyoming Highway 70 and the Brown's Hill Road. The placement of other mine facilities, such as ventilation shafts, and facilities used in marketing the coal to a coal-fired steam generation plant are not currently predictable events. Impacts to the area would vary with the placement and frequency of these facilities.

Human population increases in the Little Snake River Valley would play a significant role in adversely affecting wildlife populations. Between 1,400 and 2,500 residential units (Table 5) and an indeterminate increase in commercial facilities, fences, vehicular traffic (from 340 average daily trips to 3,000, see Transportation section), loose dogs, and recreational activities such as snowmobile use would all play a role in adversely affecting wildlife populations. Poaching of game animals and indiscriminate shooting of other wildlife are additional impacts that would result from large population increases. The significance of these impacts would depend largely on their location, magnitude, and frequency of occurrence. These indirect impacts could not be mitigated because people's actions could not be controlled at all times.

More specific indirect impacts are discussed below; they are discussed by species or groups of species. All wildlife species known or expected to inhabit the Savery area have been considered in this analysis; however, only those species significantly affected by the project are discussed.

Under the No Development Alternative, wildlife habitat and animal populations would remain near the status quo. Therefore, only the Develop-

ment Alternative is addressed under the Environmental Consequences section. The possibility exists that the impacts discussed under the Development Alternative would simply be delayed. In other words, development could occur sometime in the future. This would happen if at a later date the coal were leased through the competitive coal leasing program. Another possibility would be that wildlife impacts would occur elsewhere if the PRLA coal were exchanged. Since it is not known what form an exchange would take or where development would occur as a result of an exchange, it is not possible to analyze the wildlife tradeoffs. However, any other mineral or coal developed through an exchange would have gone through public scrutiny of the BLM planning process and environmental analyses.

Elk

Introduction

Elk would be impacted by the Development Alternative. Development of the Savery project would involve increased human disturbance and disturb many of the habitat types used by the elk population.

Affected Environment

Map 8 shows the elk habitat within the project area. The entire portion of the project area in Colorado and over 50 percent of the project area in Wyoming are delineated as part of the Battle Mountain/Horse Mountain elk crucial winter range (CWR). A CWR is that range which supports the base population during a severe winter. Animals are forced onto this limited range because of surrounding snow depth. Approximately 1,000 elk winter within the Battle Mountain/Horse Mountain CWR. This is approximately one third of the 3,200 elk that winter within the Baggs Data Analysis Unit (DAU). The wintering population within the Colorado portion of the project area is approximately 400 elk. This is 5 percent of the 7,800 elk wintering within the Colorado herd unit and 27 percent of the elk wintering within Game Management Unit-5, a subunit of the herd unit.

Vegetation found on the exposed, windswept slopes receives the highest use in winter. These slopes are usually south to west facing and are covered with sagebrush or mountain shrub habitat types. During periods of mild weather, the aspen thickets provide important thermal cover for the elk.

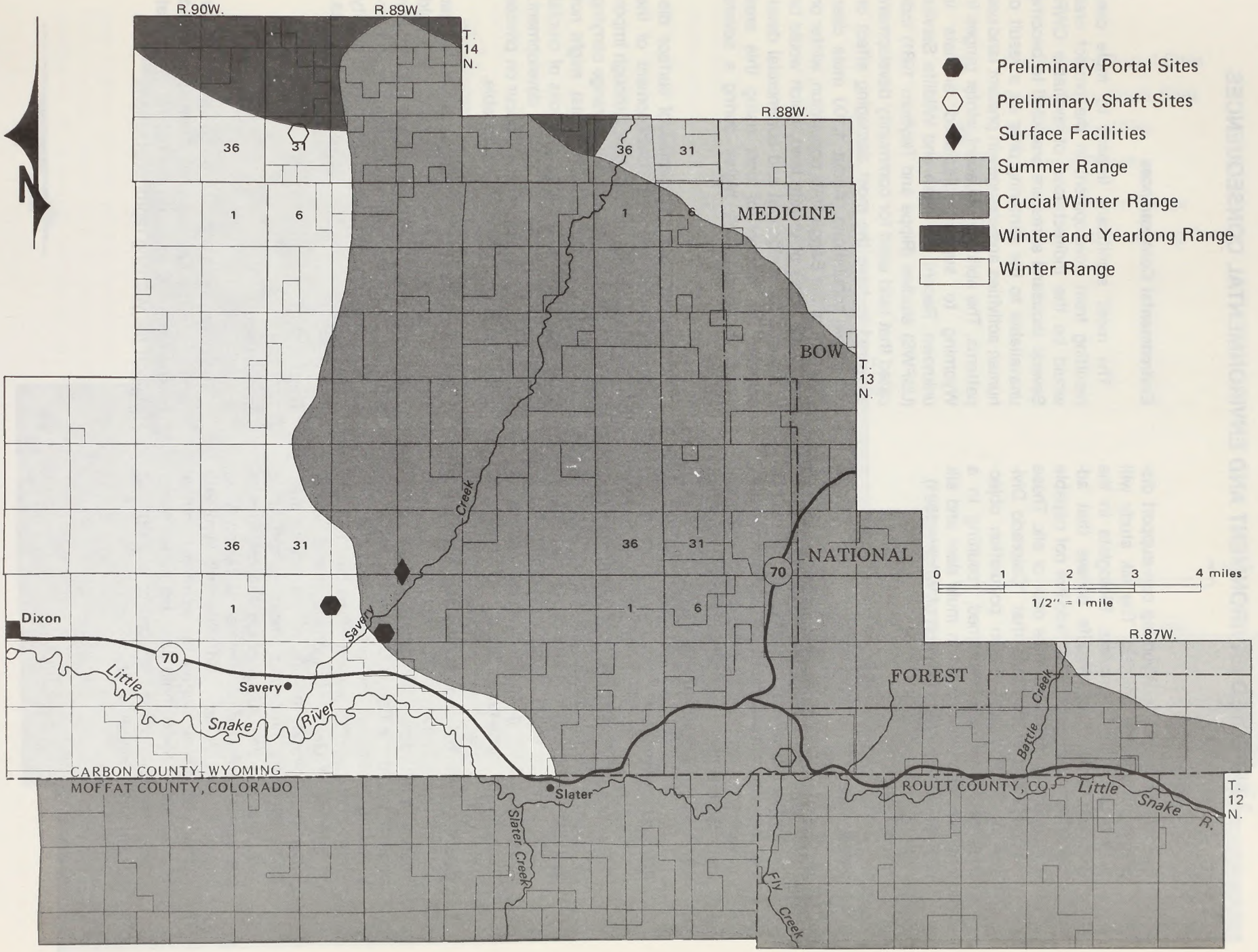
The majority of the wintering elk from the project area move to higher elevations in the Sierra Madres during the summer. The summer elk population within the project area is approximately 50 to 60 elk. Aspen woodland habitat and the aspen/sagebrush ecotone are the most important areas to summering elk. These areas provide feeding sites, security, and thermal cover for the resident elk population.

The Rawlins District BLM and the USFS' Rocky Mountain Forest and Range Experiment Station are currently in the second year of a 5-year elk study. This study is focusing on CWR habitat and boundaries, elk use and preferences within the CWR, migration routes, and competition with other ungulates in the Baggs DAU.

Environmental Consequences

The timing and juxtaposition of commercial facilities and residential units and the increase in human activity would play a significantly greater role in affecting elk than actual mining disturbance. From 80 to 85 percent of the elk would move at least a half mile (line-of-sight) from unpredictable disturbances. Thus, the continuity of use of the wintering habitat would be disrupted by human activity within the project area. This disruption would inhibit the free movement of elk from summer range to winter range as well as movement within the CWR itself. Elk expend more energy than they take in during the winter. Harassment by people and lack of suitable cover would cause the elk to move more frequently and thereby use more energy, resulting in lower energy reserves to carry the animals through winter. Lower energy reserves would result in increased mortality and lower reproductive success. Anywhere from 25 to 500 elk would be affected, depending on the placement and occurrence of human activities. (This wide range of affected elk is the professional judgment of the author; the range refers to a best- and worst-case situation.) This is 2 to 36 percent of the elk wintering in the project area, or 1 to 16 percent of the elk wintering in the Baggs DAU. It is unknown if adja-

Map 8
ELK RANGE



cent winter ranges in Wyoming can support displaced or affected animals. The elk study will help quantify these impacts. Biologists in the Colorado Division of Wildlife believe that adjacent winter ranges in Colorado are not capable of supporting displaced mule deer or elk. These biologists further conclude that "Colorado Division of Wildlife post-season population objectives could not be maintained, resulting in a long-term downward trend in mule deer and elk population." (Colorado Division of Wildlife 1981).

Mule Deer

Introduction

The mule deer population within the proposed development area would be adversely affected by the Development Alternative. Habitat alteration, as well as human disturbance, would be the primary factors that would affect the resident and wintering mule deer populations.

Affected Environment

The project area is located within two herd management units: the Baggs DAU in Wyoming and the D-2 herd in Colorado. Approximately 71,200 acres of the study area are delineated as mule deer CWR (Map 9). A large number of animals from these herds migrate from the higher elevations of the Sierra Madres to winter on mountain shrub, sagebrush, and bitterbrush habitat types within the project area. Approximately 4,100 deer, 32 percent of the 13,000 animals within the Baggs DAU, winter within the Wyoming portion of the project area. An estimated 2,000 deer, 11 percent of the herd unit and 27 percent of Game Mangement Unit-5, winter within the Colorado portion of the project area. Radio telemetry information indicates that mule deer, that use the crucial range associated with the Savery project area summer as far away as Hahns Peak, Colorado, and Miller Hill, Wyoming (40 and 50 miles). During the summer months, approximately 1,400 mule deer use aspen woodlands, mountain shrub, sagebrush, and riparian habitat types, mostly in Wyoming.

Environmental Consequences

The most significant impact to mule deer resulting from development in the project area would be the indirect loss of available CWR. Several thousand acres are predicted to become unavailable to the wintering deer as a result of human activities and changes in present land-use patterns. The ability of adjacent winter ranges in Wyoming to support displaced animals is unknown. Recent U.S. Fish and Wildlife Service (USFWS) studies (Rippe and Rayburn 1981) indicated that land used for community development appeared to have the most damaging effect on big game populations. About 1,100 mule deer, 8 percent of the Baggs DAU population, winter on the 21,000 acres of private land, which would be in demand for residential and commercial development. The number of deer using this area would be considerably higher during a severe winter.

Between 800 and 1,125 acres of surface disturbance are projected for development of the project area. On-site disturbance, although important as an agent in reducing winter range carrying capacity (and thus population levels), might not be as significant as the long-term loss of crucial winter range because of off-site development. Most of this development would occur on private lands and would not be not mitigatable.

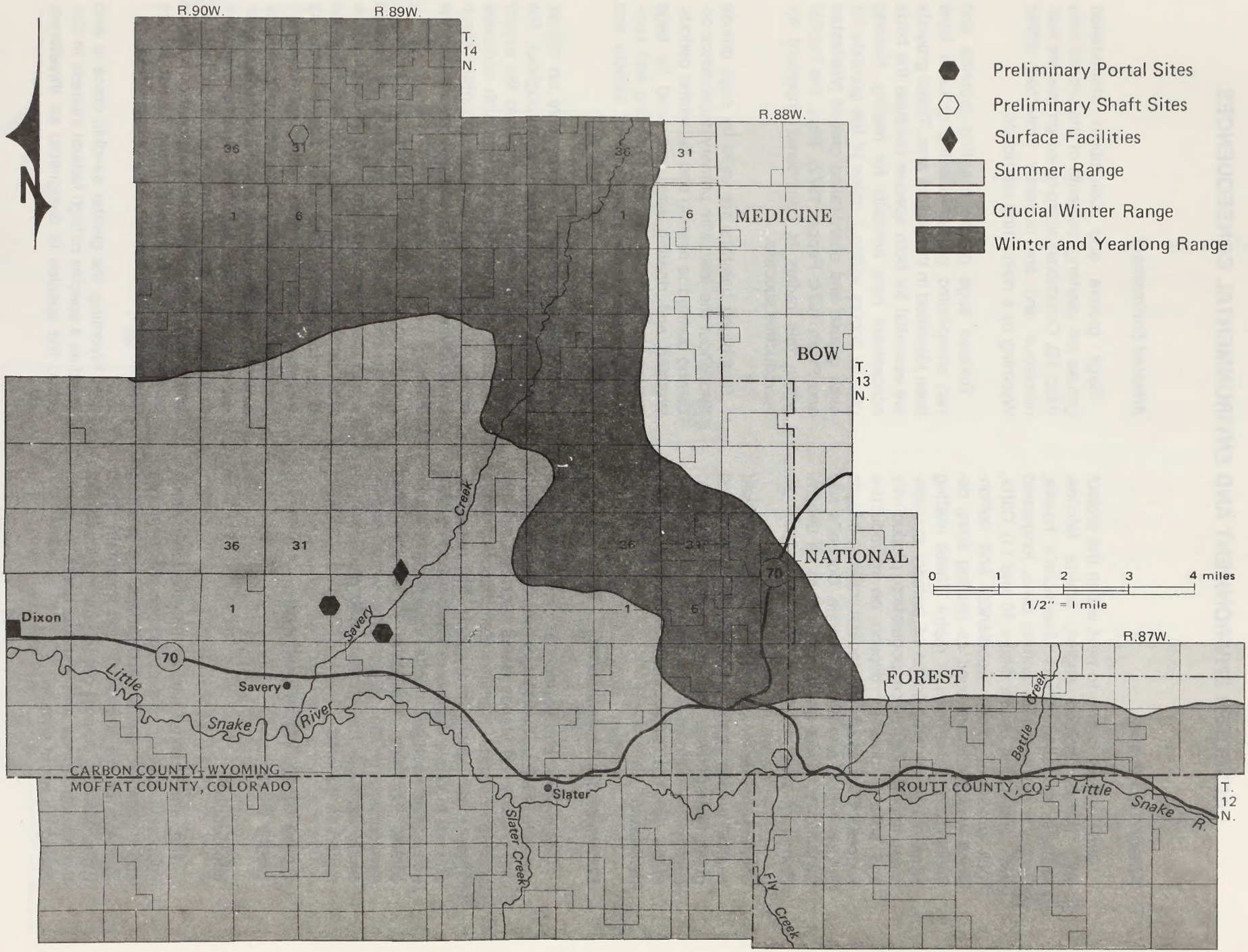
Other impacts such as changes in groundwater recharge and surface water distributions, would include the loss of aspen woodland and riparian habitats. These changes would result in an overall reduction of important summer habitat quality for the 1,400 plus deer that are yearlong residents.

Raptors

Introduction

The Savery area contains a very diverse raptor population. The Development Alternative would have an adverse effect on the habitat types that support the yearlong raptor populations.

Map 9
MULE DEER RANGE



Affected Environment

Birds of prey known to nest within the project area include golden eagles, prairie falcons, kestrels, red-tailed hawks, Swainson's hawks, Cooper's hawks, great horned owls, long-eared owls, and marsh hawks (Maps 10 and 11). Cliffs, rock outcrops, aspen woodlands, and cottonwood woodlands are used as nesting sites, depending on the species of raptor. These nesting sites are considered to be of primary management importance, since population productivity and species diversity depend on reproductive success. Species of high federal interest include golden eagles and prairie falcons. Cooper's and Swainson's hawks are considered to be uncommon in the area.

Wintering raptor populations consist of bald eagles, golden eagles, rough-legged hawks, and great horned owls. Winter use areas for bald eagles are delineated on Map 12. Winter use areas for the other species have not been delineated.

Environmental Consequences

Commercial and residential construction and possible adverse hydrological impacts to aspen and cottonwood stands would decrease suitable nesting habitat. Human disturbances would cause some raptors to abandon their nests and attempt to locate elsewhere. Cottonwood riparian and aspen woodland habitat is scarce in south-central Wyoming. Therefore, it is likely that development in the project area would significantly decrease the diversity and production of raptors in the area.

Game Birds, Waterfowl, and Shore Birds

Introduction

The varied habitat types within the Savery area support a diverse bird population. Sage grouse and Columbian sharp-tailed grouse are yearlong residents of the sagebrush and mountain shrub types. Herons, cranes, geese, and ducks inhabit the riparian zones and wetland areas, primarily during the warm season.

Affected Environment

Sage grouse and Columbian sharp-tailed grouse are yearlong residents of the project area (Map 13). Columbian sharp-tailed grouse are less numerous and are currently protected within Wyoming by a no-hunting restriction.

Thirteen sage grouse strutting grounds and two sharp-tailed grouse dancing grounds have been identified in the project area. These grounds are essential for both species because the birds concentrate here annually for mating. Nesting usually occurs within 2 miles of the grounds for sage grouse and sharp-tailed grouse (Wallestad and Pyrah 1974; Pepper 1972). Thus, the habitat within this radius is considered important for reproductive success.

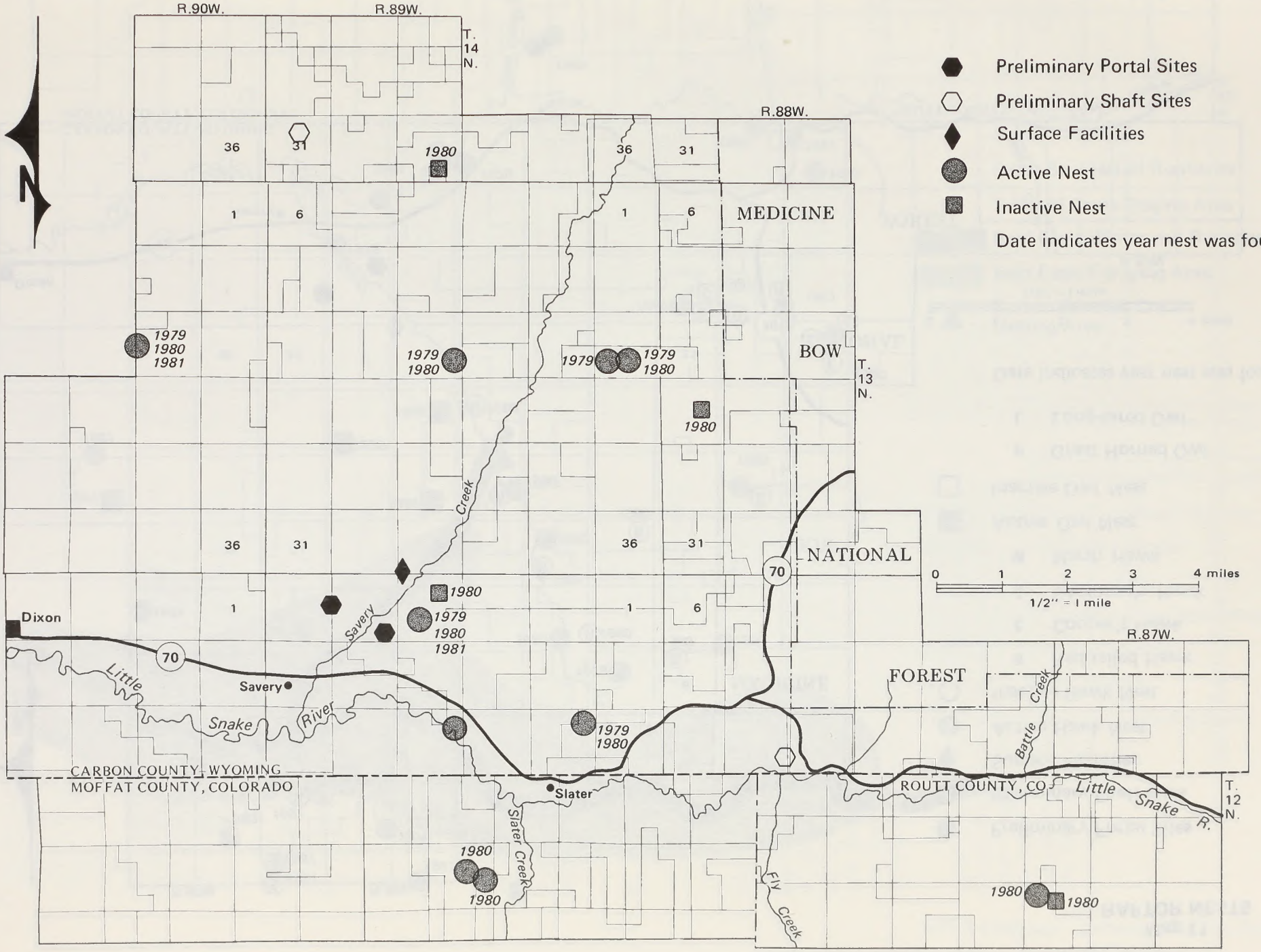
Sagebrush habitats are used by sage grouse throughout the year, with primary dependence occurring during the nesting and fall-winter periods. Wetland and riparian sites are used by sage grouse during brood rearing in spring and summer because of the abundance of insects and succulent forage.

Sharp-tailed grouse are dependent on climax mountain shrub communities throughout the year (Hart et al. 1950). Shifts toward the aspen/mountain shrub and aspen/sagebrush ecotones occur during the summer. The mountain shrub habitat type is used for food and cover during the winter.

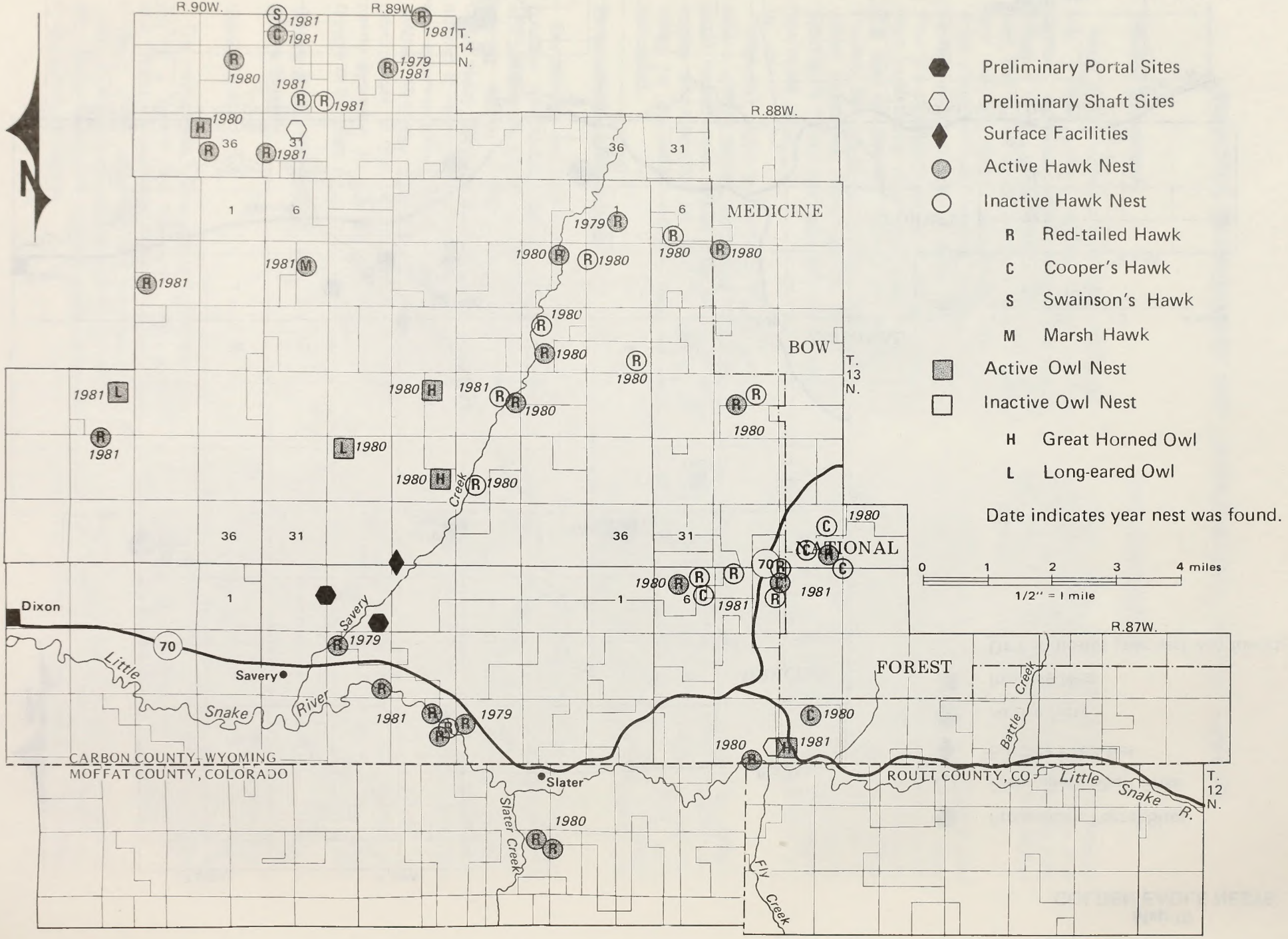
Four great blue heron rookeries are located within the project area (Map 12). Riparian zones with large cottonwoods are required by these birds for nesting. The Little Snake River, its tributaries, and standing water are important foraging areas. Because of their scarcity and sensitivity, great blue herons are of high federal interest in south-central Wyoming and northwestern Colorado. This designation indicates a high interest for the species from a regional or national perspective, and the species and its habitat are offered special considerations or protection.

In Wyoming, the greater sandhill crane is also listed as a species of high federal interest; in Colorado the species is designated as threatened.

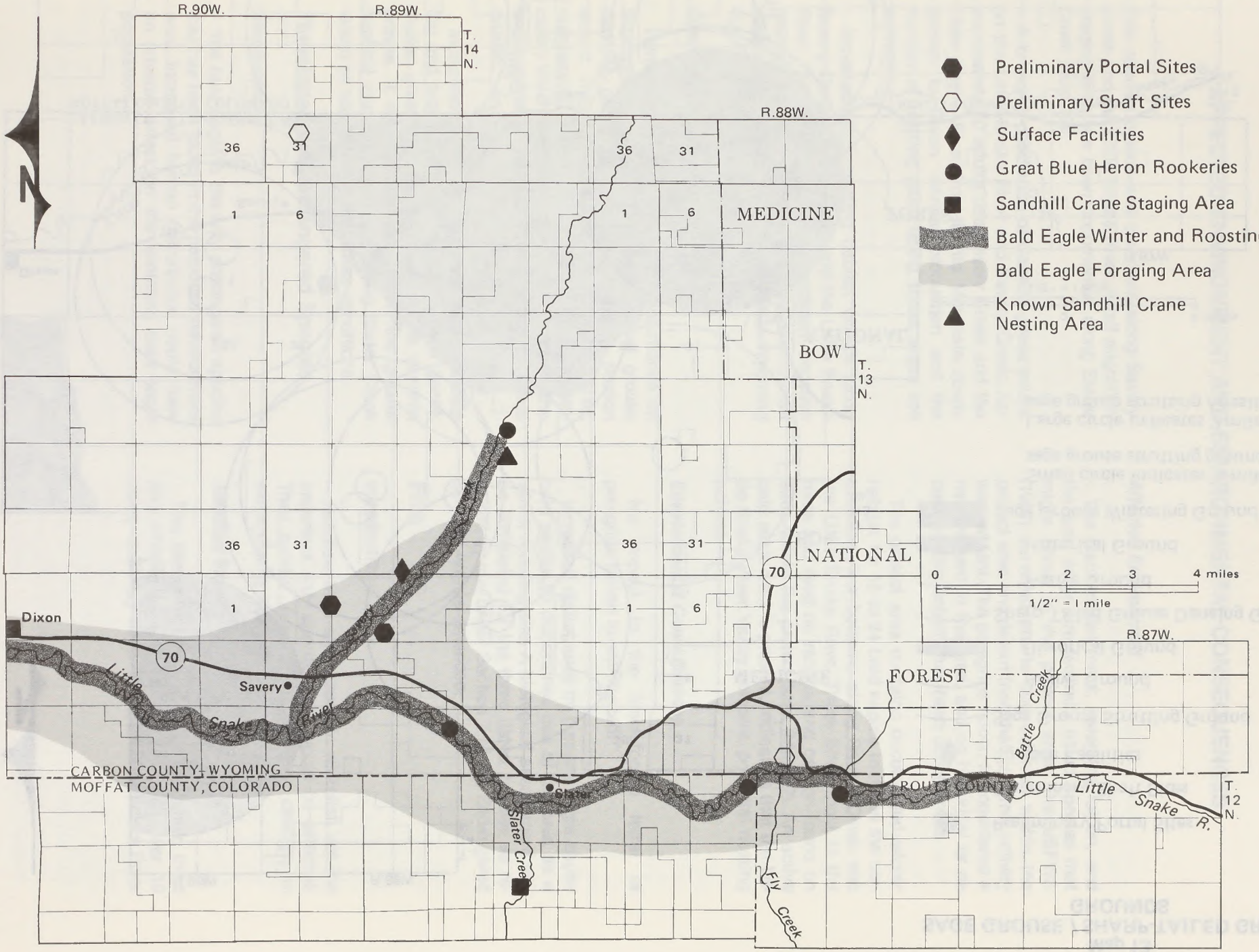
Map 10
GOLDEN EAGLE NESTS



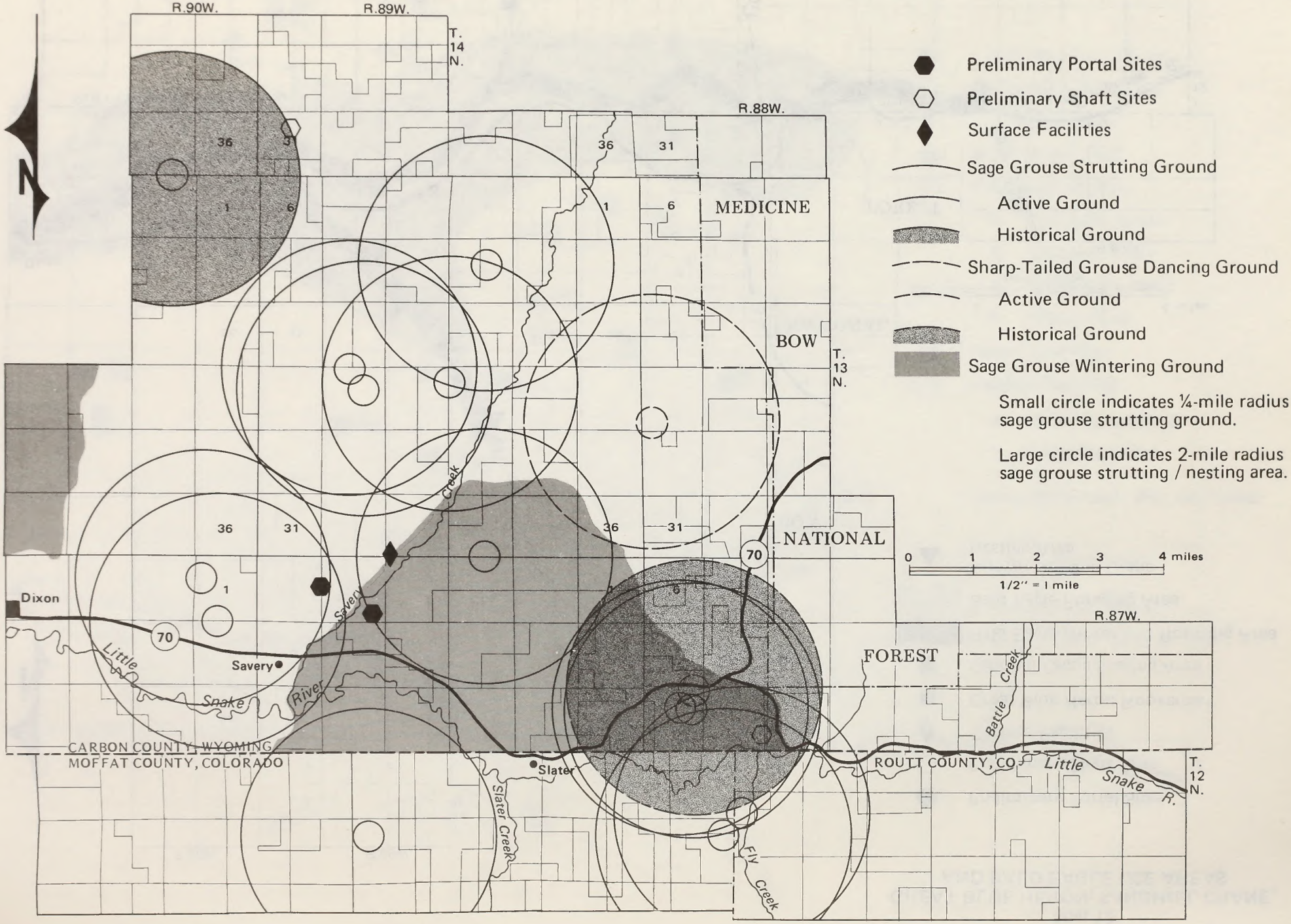
Map 11
RAPTOR NESTS



Map 12
GREAT BLUE HERON, SANDHILL CRANE, AND BALD EAGLE USE AREAS



Map 13
SAGE GROUSE / SHARP-TAILED GROUSE GROUNDS



This species breeds and summers along Savery Creek and the Little Snake River. A fall migration staging area has been documented along Slater Creek (Map 12).

A breeding population of Canada geese exists on the Little Snake River and Savery Creek. Approximately 50 adults use Savery Creek and the Little Snake River from Battle Mountain downstream to Dixon. Annual production and the number of nesting pairs using these areas are unknown.

Important duck nesting habitat occurs along Savery Creek, Slater Creek, and the Little Snake River. This nesting habitat is significant because dependable water sources and aquatic/riparian vegetation are scarce in south-central Wyoming and northwestern Colorado.

Environmental Consequences

Human activities and surface disturbance on sage grouse strutting and sharp-tailed grouse dancing grounds during the breeding season would impair reproductive success. Also, numbers of sharp-tailed grouse could be significantly lowered by larger numbers of hunters, who could mistake the protected species for sage grouse.

Increased human activity would disrupt breeding and brood rearing areas for Canada geese, ducks, great blue herons, and greater sandhill cranes. It cannot be determined if the greater sandhill crane staging area along Slater Creek would be abandoned under these conditions.

Threatened and Endangered Species

Introduction

The bald eagle is the only endangered species that has been found in the proposed development area. Increased human disturbance could have an adverse effect on the wintering bald eagle population.

Affected Environment

The black-footed ferret, peregrine falcon, and the bald eagle are federally listed species that might occur in the project area. The USFWS (1981) surveyed prairie dog colonies within the project area and determined that no ferret activity was evident. The peregrine falcon is considered a rare migrant in the area, and no historical or recent nesting activity has been documented.

The project area contains documented winter habitat for 18 to 24 bald eagles that use the cottonwood river bottoms along Savery Creek and the Little Snake River. These birds roost in the trees and feed on rabbits and carrion found on sites within the project area (Map 12). An active bald eagle nest is present, indicating that the Little Snake River Valley contains potential nesting habitat.

Environmental Consequences

No impact to the black-footed ferret or peregrine falcon is anticipated.

Increased disturbance by humans might cause bald eagles to discontinue use of the area as a winter roosting site. A biological assessment will be completed for the three listed species as required by law under Section 7 of the Endangered Species Act, as amended.

Fish

Introduction

Rainbow trout and mountain whitefish are the important fish species that would be affected. Their habitat would be affected by changes in water quality and quantity.

Affected Environment

Two stream sections containing rainbow trout and whitefish would be affected: the lower 10 miles of Savery Creek and the Little Snake River

east from Dixon for approximately 20 miles. Savery Creek, from the surface facilities downstream to the confluence with the Little Snake River, is dewatered for irrigation and is poor year-round habitat for both rainbow trout and whitefish. Savery Creek from the surface facilities upstream to the northern edge of the northeast recoverable coal is perennial and provides fair trout habitat. The affected section of the Little Snake River is rated as poor trout habitat and fair whitefish habitat. Landownership along both stream sections is almost entirely private.

Rainbow trout in both stream sections are stocked fish. Brown trout have recently been stocked in the Little Snake River, but their survival has yet to be evaluated. Mountain whitefish dominate in the Little Snake River, but they are rarely found in Savery Creek. Mountain whitefish are native to both streams. Introduced trout species are apparently unable to establish self-reproducing populations, probably due to lack of suitable spawning conditions in the vicinity.

Low flows and dewatering for irrigation are problems in both stream sections. Summer water temperatures are marginal, and in the Little Snake River there is a lack of cover for trout.

Environmental Consequences

Although total annual water yield is expected to remain the same under the Development Alternative, streamflows would be reduced within the cone of depression under mined areas. Effects to streamflow flow would be expected during the summer months when flow conditions for trout and whitefish are already marginal. The portion of Savery Creek (7 miles of habitat in fair condition) underlain by the northeast recoverable coal area would be negatively affected by loss of summer flow (Map 5). Portions of the Little Snake River would also be negatively affected.

Pumped water discharge would affect both water quality and quantity. Effects would be the greatest during the summer low-flow period. Below discharge points, streamflows would exceed normal summer flows and, depending on the temperature and chemical quality of the discharged water, the quality of trout and whitefish habitat might either be improved or degraded.

Since there is insufficient information (location of discharge points, areas likely to be dewatered, water quality and quantity to be discharged, etc.) to predict impacts to fisheries under the Development Alternative, a worst-case situation would be considered. In this case, virtually all the affected streams would be degraded, and since much of this habitat is already marginal, little or no usable habitat would be left.

Mitigation Measures

In the case of selection of the Development Alternative, the following mitigating measures would be considered to maintain or improve salmonid habitat:

1. Maintain or improve water quality during summer. Treatment of pumped groundwater during summer to meet or exceed the quality of the receiving waters. Provide cool, clean water for summer discharge. Methods to augment summer (e.g., storage) flows will be considered.

2. Maximize benefits and limit negative impacts. Discharge high quality water as far upstream as possible and low quality water as far downstream as possible.

3. Improve existing habitat. Examples of methods might be:

    a. Purchase local water rights and let them lapse. This will increase summer streamflows and reduce amount of poorer quality irrigation water returning to streams (Little Snake River).

    b. Create habitat improvements or survival areas. Additional cover can be provided in the Little Snake River, or survival pools can be constructed in dewatered stream sections.

Wildlife mitigation measures are applicable to predictable impacts that may occur on federal lands. These impacts would probably affect between 125 to 150 acres out of a total of 71,000 acres affected by the Development Alternative.

None of these mitigation measures will mitigate any of the significant impacts identified in this EIS.

As a result of the coal unsuitability criteria (numbers 11, 13, 14, and 15), the BLM multiple-use analysis, and this EIS, the following mitigation measures have been proposed.

1. The following areas, which occur on public lands, are restricted to very limited surface operations and occupancy. These areas are subject to stipulations for specific placement, design and type of facilities, and seasonal occupancy.

    a. Elk and mule deer crucial winter ranges (Maps 8 and 9). (This is a multiple-use decision.)

    b. Within a quarter-mile radius of the center of sage grouse strutting/nesting complexes and sharp-tailed grouse claiming nesting complexes (Map 13).

    c. Within delineated buffer zones, as agreed on by BLM and the USFWS during the coal unsuitability criteria review around golden eagle nests, prairie falcon aeries, great blue heron rookeries, and sandhill crane nesting areas (Maps 10, 11, and 12). Nesting structures and those features within the buffer zone that make it suitable for nesting shall not be disturbed at any time (e.g., trees and associated wetlands that comprise a great blue heron rookery, and cliff sites, rimrock, or trees for golden eagles). (This is an unsuitability determination.)

2. Staging and nesting areas for sandhill cranes are known to exist on the permit area, but all of these areas have not been identified. The lessee shall survey the permit area and those areas considered for off-site mitigation for sandhill crane nesting sites, staging areas, and other high priority habitat essential for maintaining the requirements of this species. The lessee shall provide information from this survey to BLM and USFWS. (This is an unsuitability determination.)

3. Where limited surface occupancy occurs (i.e., ventilation shafts and small access roads), the following habitat recovery and replacement plan shall take effect. The lessee shall replace wildlife and fisheries habitat loss and mitigate the resultant loss or displacement of wildlife species. Concurrently with the filing of the mine plan, the lessee shall submit for approval to BLM and USFWS a habitat recovery and replacement plan for protection or enhancement of wildlife and fisheries populations affected by habitat loss or displacement from historical habitat. The habitat recovery and replacement plan, which will be based on estimates of lost and disturbed habitat, shall be developed in consultation with BLM, USFWS, the Colorado Division of Wildlife, and the Wyoming Game and Fish Department. The habitat recovery and replacement plan shall indicate the proven methods to be employed by the lessee, which will ensure that the postmining vegetative community has the diversity and density of the premining community and utilizes the species occurring naturally on the area. This will promote postmining use by existing wildlife species. Mitigation methods may require the lessee to employ techniques for wildlife range manipulation or intensive wildlife range management. Mitigation during the mining and reclamation stages may be accomplished on lands outside the permit area that have been made available through the surface management agency, the state, or the lessee, in combination with recovery and replacement methods on suitable lands within the permit area. The habitat recovery and replacement plan will include the following:

    a. A habitat analysis of the permit area and those areas considered for off-site mitigation that identifies: (1) distribution of important wildlife species (game, nongame, sensitive species, species of high federal interest, and threatened and endangered species), (2) distribution of important standard habitat types, and (3) the relationship between the wildlife species and the standard habitat types that occupy the areas.

b. A detailed description of the methods selected by the lessee to mitigate habitat loss during the mining and reclamation phases, together with a comparative analysis of alternative methods that were considered and rejected by the lessee and the rationale for the decision to select the proposed methods. The methods used by the lessee for recovery and replacement may include, but are not limited to, the following techniques: increasing the quantity and quality of forage available to wildlife and fisheries; acquiring critical wildlife and fisheries habitats; mechanically manipulating low quality wildlife or fisheries habitat to increase habitat value for selected wildlife or fish species; and recovering, replacing, or protecting important wildlife habitat by selected fencing.

c. A timetable giving the periods of time that will be required to accomplish the habitat recovery or replacement plan and showing how this timetable relates to the overall mining plan.

d. An evaluation of the final plan by the Colorado Division of Wildlife and the Wyoming Game and Fish Department. State officials shall comment on the methods selected and the techniques to be employed by the lessee and may recommend alternate recovery or replacement methods.

The lessee shall develop and implement a comprehensive monitoring program to measure the effectiveness of the habitat recovery and replacement plan outlined above. Baseline data collection for comparison purposes will begin immediately on leasing of the PRLAs. The success of a given recovery or replacement method will be determined by criteria established jointly by BLM, USFWS, Colorado Division of Wildlife, and the Wyoming Game and Fish Department. (This is a multiple-use determination.)

Irreversible and Irretrievable Commitments of Resources

Impacts resulting from residential and commercial construction would be irreversible and irretrievable. However, impacts associated with human disturbance would cease when the mine closed and people left the area seeking new jobs. Except for rare species at low population levels, wildlife is a renewable resource. Once people leave the Savery area, wildlife would again be able to use the habitat and their numbers would increase.

Conclusion

Development of the Savery PRLAs might adversely affect up to 500 elk, 1,100 mule deer, numerous raptors (including bald eagles), sandhill cranes, great blue herons, geese, ducks, and sage and sharp-tailed grouse. Some of these impacts would be individually significant, but the cumulative impact would be even greater.

The Savery area contains habitat essential to the survival of numerous wildlife species. This type of habitat is rare in south-central Wyoming, which adds to the area's significance for wildlife in the state.

Most of the previously described wildlife impacts are vague. This is because their degree of significance is directly related to unpredictable changes in human activities and land use. Consequently, wildlife-coal development tradeoffs must be expressed in terms of the risk of significantly affecting wildlife. Since wildlife values in the vicinity of the Little Snake River Valley are among the highest in south-central Wyoming and northwestern Colorado, there is a high probability that large human population increases in the area would conflict significantly with wildlife. If coal development were allowed to proceed in the Savery area, the risk would be high that significant unmitigatable wildlife impacts would occur.

RECREATION

Introduction

The overall result of major population growth would be that the area's recreation resources would suffer considerably in quality. One of the major reasons that this area has such high quality recreation resources is that use is relatively low and the resource is ample. Large numbers of new people in the area mean less for each person.

Affected Environment

Opportunities for almost all types of dispersed recreation are available. The most popular activities are hunting, fishing, hiking, camping, horseback riding, water-oriented activities, picnicking, snowmobiling, and cross-country skiing.

Off-road vehicle use is generally a secondary form of recreation, a means of travel to reach a specific destination for hunting, fishing, camping, etc. The activity, as a primary use, is limited to very low numbers, usually small clubs or organizations utilizing trail bikes, snowmobiles, and 4 x 4s.

Camping is one of the most popular dispersed recreation activities in the region. The USFS, National Park Service, BLM, Colorado and Wyoming Parks and Recreation departments, and fish and game divisions provide both undeveloped and developed sites within the region.

Winter activities such as downhill skiing, cross-county skiing, snowmobiling, sledding, and ice fishing are significant recreation activities from November through March. The majority of these activities take place on public lands administered by USFS. Winter sports account for 39 percent of all use on the three national forests in the region. With the exception of downhill skiing, there is a surplus of public land, primarily BLM, available for these activities.

Environmental Consequences

The majority of the population moving to the area becomes involved in outdoor recreation activities, both in the county and the surrounding areas. The obvious result of a surge of population in-migration is greater numbers of people participating in the opportunities offered in the area. The area offers a number of high quality opportunities for which it is widely recognized. Those include hunting for big game, small game and birds; fishing, particularly on the North Platte River and in the Medicine Bow National Forest; and a host of related activities such as camping, sightseeing and off-road vehicle driving.

Greater numbers of people participating in hunting and fishing would result in a greater total number of hunter and fisherman days. With development of the PRLAs, given the above assumptions, the following impacts would result.

1. Larger numbers of deer and elk hunters would be in the field seeking a fixed or slightly decreased game population.

2. A decreased hunter success ratio for deer and elk would likely result from increased numbers of hunters.

3. Increased numbers of deer and elk hunters and a fixed or declining game population might result in overharvest or more restrictive hunting seasons. More restrictive seasons would come in the form of shorter seasons, limited quota areas, or restrictions as to sex or animal size (for example, buck deer, 4 points or greater, either antler).

4. Antelope hunting in the area would be relatively unaffected. The major impact would be that for the more preferred hunt areas it would be more difficult to obtain a license because of the larger numbers of people applying for limited number of licenses available. Preferred areas are those made up predominately of public lands.

5. Larger numbers of people involved in outdoor recreation in recent years has resulted in more conflicts with other land uses such as livestock grazing. Conflicts with grazing have usually taken the form of disturbed livestock and gates left open. There has also been an increase in vandalism and other crimes such as destroyed public and private

property or shot livestock and deliberately damaged fences. The result has been an increasing number of landowners closing their property to free access and instituting fee systems for recreational use. This trend would surely continue with increases in local population.

6. Habitat loss might result in decreased hunting opportunities.

Unavoidable Adverse Impacts

Increased pressure on open space recreation as a result of increased demand for recreation facilities from population growth would be an unavoidable adverse impact.

WATER RESOURCES

Groundwater

Introduction

Mining would be done almost entirely below the potentiometric surface of the Mesaverde Group and the water table in the alluvium along the Little Snake River. Pumping would be required to dewater the mine to allow for coal extraction. Drawdown, induced by this pumping, would alter the present flow pattern, resulting in possible changes in the recharge and discharge points and in the quality of the water. These changes might affect nearby wells and springs and discharge to the streams.

Affected Environment

Groundwater occurs under both artesian (confined) and water-table (unconfined) conditions in the vicinity of the Savery PRLAs. The Mesaverde Group, including the coal-bearing Almond Formation, underlies the area; the Brown's Park Formation unconformably overlies the Mesaverde, capping the uplands. Alluvium forms the floors of the Little Snake River and Savery Creek valleys. A number of high-angle faults cut these formations, which may provide enhance groundwater flow between them.

The Mesaverde Group consists of alternating layers of sandstone and shale, interspersed with coal seams. Sandstone is the principal water-bearing material, but coal beds may also contain substantial amounts of water. The Mesaverde crops out along the western flank of the Sierra Madre uplift, from Rawlins in the north to Colorado in the south.

Groundwater from the Mesaverde is the source of most of the base flow of Savery Creek. Iorns (Iorns et al. 1965) estimated that Savery Creek derives about one third of its flow from groundwater inflow. Recharge of the creek is from precipitation on the outcrops, leakage from the overlying Brown's Park Formation, and from small streams flowing from the mountains.

Water in the alluvium is closely connected with the streamflow and with groundwater in the Mesaverde Group. When streamflow is high or irrigation water is used, the alluvium is recharged by water from the stream; when streamflow is low it discharges water into the stream and is, in turn, recharged by groundwater from the Mesaverde Group. Besides discharging water into the stream, much of the water flowing through the alluvium is discharged through evaporation from lakes, streams, and soil surfaces and by transpiration from deep-rooted plants and riparian vegetation.

The towns of Savery, Dixon, and Baggs all derive their water supplies from shallow wells that have been dug into alluvium. These wells are replenished by infiltration from the Little Snake River or Savery Creek; the well system at Baggs reportedly produces up to 800 gallons of water per minute.

Groundwater from the Mesaverde Group generally has a dissolved-solids concentration of between 500 and 1,000 milligrams per liter. Sodium and bicarbonate are usually the predominant ions, resulting in fairly soft water. Water from alluvium is likely to have a dissolved-solids concentration of less than 500 milligrams per liter, but calcium may be the predominant ion, and the water may be hard. The pH of water from either the Mesaverde or the alluvium is substan-

tially above 7, indicating that acid drainage from the mine is unlikely, and, if any occurs, it should be readily neutralized. Some groundwater from the Mesaverde Group contains dissolved flammable gas.

Environmental Consequences

Inflow of groundwater into active mining areas would interfere with mining, because it would have to be pumped out. Pumping water out of the mine would create a cone of depression that might extend to nearby wells and springs. If the yield of affected wells and springs were diminished, they could conflict with current users' water rights Also, the hydraulic gradient from the aquifers to streams within the extent of the cone of depression might be reversed, causing water recharge from the streams to the aquifers thereby diminishing streamflow. Present data are inadequate to permit prediction of the effects of dewatering. Before such effects can be evaluated, knowledge of the sites where pumping will be done, the rates of pumping, the ability of the affected parts of the aquifer to transmit water, and the storage in the aquifer will be needed. These data would be invaluable to the mine operator in making plans for mining and designing mitigative measures.

Over a long period of time, the amount of water pumped from the mine would balance any diminution of discharge to wells, springs, or streams. If the mine water were discharged to the streams, no net reduction of streamflow would occur below the discharge point—a slight increase could result from interception of water that would otherwise be discharged through evapotranspiration.

Subsidence, as a result of mining, could change the water bearing capacity of the rocks by causing fractures through which water could be lost. Subsidence could also disrupt the surface topography and change present drainage patterns. Prediction of the extent and severity of any disruptions would require further knowledge of the mining plans.

The flow pattern of groundwater in the aquifers near the PRLAs would be changed by mining. The change in groundwater from sandstone beds to coal beds could cause a concentration of some trace elements at the interface between the two beds. If these trace elements, some of which are toxic at any but low concentrations, were mobilized in the water as a result of mining, the mine discharge might contain harmful concentrations that would complicate disposal of the water. Estimates on the quality of water pumped from the mine could be erroneous if they were based on data from existing wells and springs.

The applicant has proposed to use groundwater pumped from the mine to supply most of the water required for on-site handling of the coal. This would cause further deterioration in the quality of the water. Some of the water might be disposed of by discharing it into streams, but it would have to be treated to meet Wyoming water-quality standards before it would be discharged. Effluent standards are enforced by the Wyoming Department of Environmental Quality (DEQ) and the Colorado Department of Health, which must issue National Pollutant Discharge Elimination System permits for all unnatural polluting sources. Uncertainty as to the quality of the water to be treated complicates any analysis of the economic feasibility of the treatment. The treated water would undoubtedly be inferior in quality to that of the receiving streams.

After the cessation of mining, the mined-out workings would be flooded, forming an extensive underground reservoir. This reservoir could be useful, depending on the quality of the water. When the mine filled with water after cessation of mining, discharge at the surface would begin. The site of this discharge might be different from the operations site during mining, and the water would presumably not be treated, since mining operations would habe ceased. These discharges could be capped to mitigate this impact. If the water is of poor quality, the impact on receiving streams could be serious.

The use of groundwater as the source of water for additional public supplies or for individual homes or plant supplies could cause some interference between wells. The effects cannot be assessed until the actual distribution of wells is known. The state engineer of Wyoming and the Division of Water Resources in Colorado have

jurisdiction over water rights and can impose mitigative measures if problems arise. Disposal of sanitary wastes through septic-tank systems would recharge the aquifers to some extent, but concentrations of such disposal systems might overwhelm the soils' assimilative capacity and contaminate groundwater or surface runoff.

Water in several of the coal test holes in the general area of the PRLAs emitted flammable gas. If such gas were present in groundwater that would be pumped from the proposed mines, it could present a serious hazard, either underground or at discharge sites. See Geology and Minerals section. Evaluation of the possible presence of gas and plans to mitigate such hazards could cause legal conflicts.

Surface Water

Introduction

The mine operations are not expected to directly cause any significant impacts to surface waters. However, the projected increase in population would require new or greatly expanded water-supply systems. This increase in demand could be the motivating factor for construction of at least one of the several reservoirs that have been proposed for Savery Creek and the Little Snake River.

Affected Environment

Savery Creek and the Little Snake River are perennial streams whose headwaters drain the west slope of the Sierra Madres. Savery Creek flows into the Little Snake River, which flows into the Yampa River in Colorado. Streamflow gauges have been operated on several streams in the vicinity of the Savery project (Map 14). Average daily discharges at two of these gauges, station 09253000 on the Little Snake River and station 09256000 on Savery Creek, are shown in Figure 2. Most runoff from the area occurs during spring and early summer as a result of snowmelt. Low flows during late summer, fall, and winter are the result of groundwater inflows.

Precipitation in and near the area is highly related to elevation, with the high mountains receiving up to 40 inches per year and the lower valley areas receiving about 16 inches per year. The average runoff of the Little Snake River at station 09253000 is greater than twice that of Savery Creek at station 09256000, even though the drainage area of Savery Creek is larger (Table 6). The striking difference in runoffs is because the headwater drainage of the Little Snake River is higher in elevation and, therefore, receives more precipitation than that of Savery Creek.

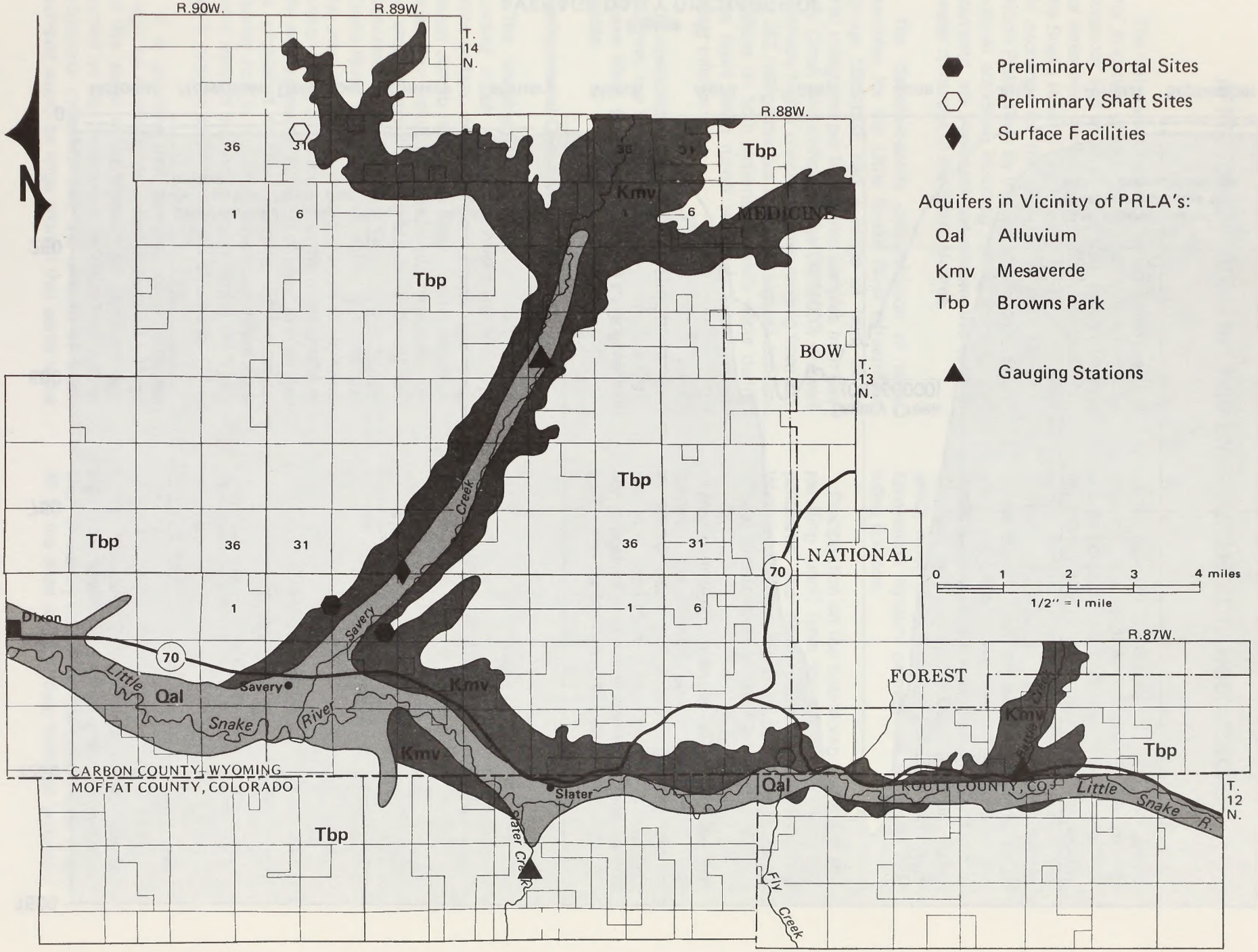
TABLE 6

SUMMARY OF THE STREAMFLOW RECORDS

Station Number	Station Name	Records Available (years)	Drainage Area (square miles)	Average Discharge (cubic feet (per second)
09253000	Little Snake River near Slater, Colorado	1942-47 1950-82	285.0	227.0
09253500	Battle Creek near Slater, Colorado	1942-51	85.3	83.1
09255000	Slater Fork near Slater, Colorado	1931-82	161.0	74.3
09256000	Savery Creek near Savery, Wyoming	1941-46 1947-72	330.0	104.0

Source: U.S. Geological Survey, Water Resources Data for Wyoming.

Map 14
STREAMFLOW GUAGES AND SURFACE GEOLOGY



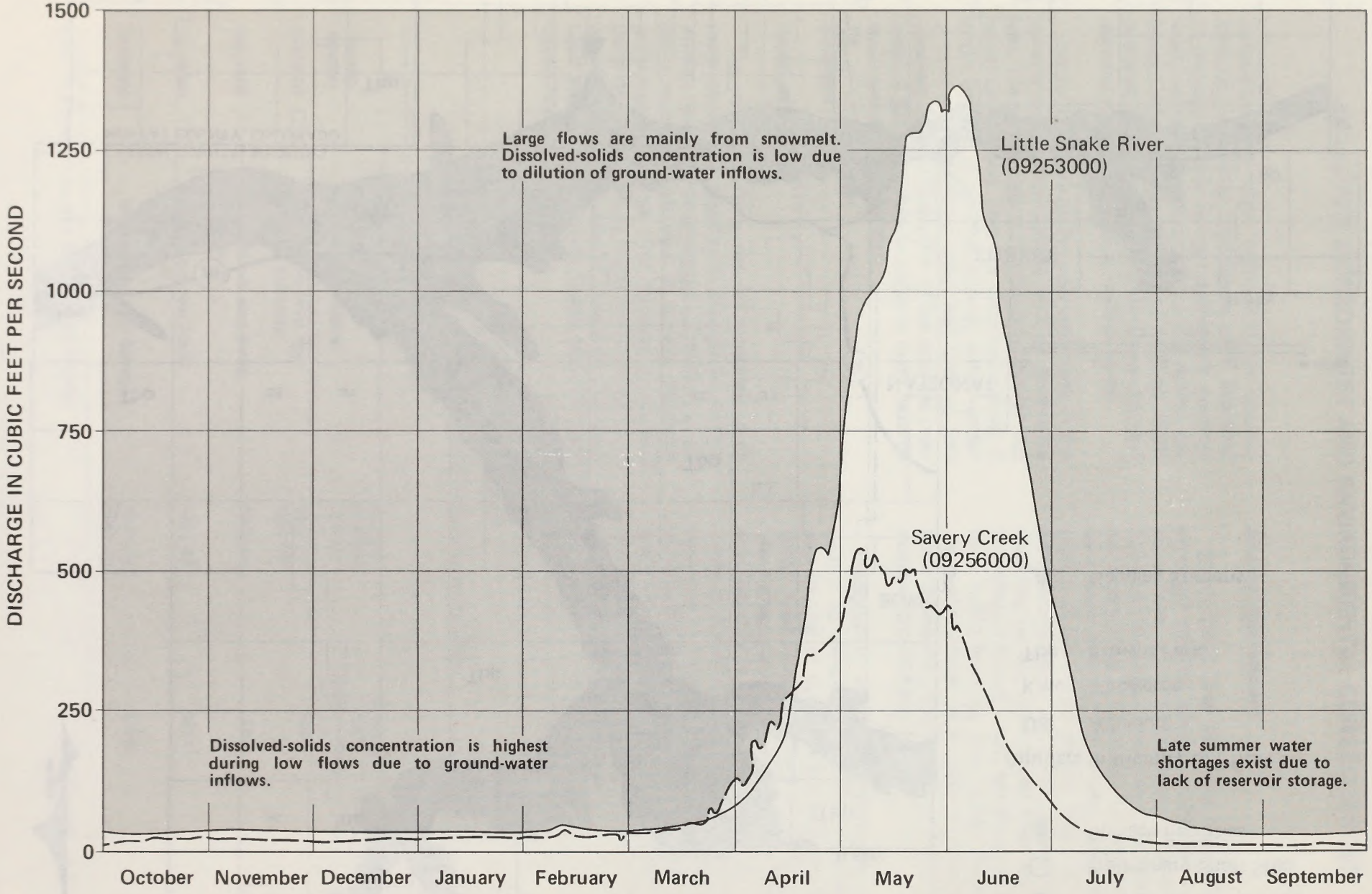


Figure 2
AVERAGE DAILY DISCHARGE OF
LITTLE SNAKE RIVER (GUAGING STATION 09253000)
AND SAVERY CREEK (GUAGING STATION 09256000)

The main uses of surface waters in the area are for irrigation of hay crops and consumption by livestock and wildlife. Some trans-basin diversion of water from the headwater tributaries of the Little Snake River is made to the North Platte River in exchange for the other water used from the North Platte River by the city of Cheyenne. Recreational activities, including fishing, hunting, and camping, are important nonconsumptive uses of water resources in the Sierra Madres.

The dissolved-solids concentration of water samples for the Little Snake River (streamflow gauge 09253000) had a range of from 34 to 160 milligrams per liter. Water samples from Savery Creek (streamflow gauge 09256000) showed relatively higher concentrations, ranging from 231 to 282 milligrams per liter. The highest concentrations on both streams generally occur during low flows when runoff is largely from groundwater inflows.

Suspended-sediment concentrations are relatively low in both Savery Creek and the Little Snake River, and stream channels are generally stable.

Environmental Consequences

The construction of surface facilities, including office, shop and warehouse buildings, mine portals, air shafts, the conveyor, and roads would disturb relatively small areas of the drainages. The disturbed areas would be susceptible to erosion and could contribute sediment and dissolved solids to Savery Creek and the Little Snake River. However, the amount of runoff from the areas would be expected to be relatively small and of no signifiant impact to the water quality of the area's streams. Pollution of water in Wyoming is prohibited by the Wyoming Environmental Quality Act. In situations where significant sediment washoff may occur, the Wyoming DEQ generally requires sediment control structures.

It is possible that pumping of groundwater might be necessary to dewater the mines. Some of this water would probably be used and consumed on site; however, experience from similar situations indicated that the amount of water pumped would be large enough that some water would have to be discharged into the area's streams. The resulting increase in stream discharge could have a beneficial impact by providing more water to downstream users, especially during periods of low streamflow. However, the pumped groundwater would probably be of poorer quality than the existing streams, especially the Little Snake River. Point source discharges are regulated in Wyoming by DEQ and in Colorado by the Colorado Department of Health, which must issue National Pollutant Discharge Elimination System permits for unnatural polluting sources.

Precipitation on the coal-storage piles and the resulting runoff have the potential for washing pollutants into nearby streams. However, the Wyoming DEQ has regulations that require diking of coal piles to prevent runoff leaving the site.

The estimated increase in water use for domestic purposes is shown in Table 7. The amount of water that would be used by the increase in population would be small in comparison to present amounts diverted and used for irrigation and for the city of Cheyenne.

TABLE 7

INCREASE IN WATER USE SINCE 1980[1]

Coal Production MTY[2]	1985 Cf/s[3]	1992 Cf/s[3]	1999 Cf/s[3]	2028 Cf/s[3]
4	0.2	0.9	1.5	0.7
5	0.4	1.4	1.9	0.7
6	0.4	1.6	2.3	1.1
7	0.4	1.6	2.6	1.5

[1]Estimated water use of 200 gallons per day per person.

[2]Million tons per year.

[3]Cubic feet per second.

The Wyoming Water Development Commission has identified several potential reservoir sites on Savery Creek and the Little Snake River. All of the sites are upstream from the proposed

mines. The most downstream site for the potential reservoirs on Savery Creek is the Sandstone Reservoir (Map 14).

The existing water-supply system of Baggs might not be able to accommodate the projected increase in population. However, the increase could have a motivating effect for development of a new water supply in conjunction with construction of one of the proposed reservoirs. The development of one or more reservoirs would cause significant changes to the existing patterns of runoff and water use.

Floodplains

Introduction

The proposed mining operations would have no significant impact on floodplains. Associated development near Baggs and Dixon would destroy some floodplain areas and result in a loss of small portions of agriculture lands and wildlife habitat.

Affected Environment

Savery Creek and the Little Snake River have well-developed floodplains. A covered conveyor and road would cross the floodplain of Savery Creek, connecting the east and west mines. The Sugar Loaf Mine would either tunnel or mine under the floodplain of Little Savery Creek.

Environmental Consequences

A relatively small area of land would be disturbed by the access road that connects the east and west mines. The construction and operation of the road and conveyor would probably have a minimal impact on the Savery Creek flood plain.

The Sugar Loaf Mine would either tunnel or mine under the Little Snake River. Some subsidence could occur; however, the amount of stream and floodplain affected would be relatively small. If subsidence did occur, the channel would readjust its size and gradient with little impact to the downstream environment. The location of the proposed tunnel would be in Colorado. The Mined Land Reclamation Board, which is the regulating agency in Colorado, has the authority to review mine plans and can stipulate measures to minimize subsidence before issuing a mining permit.

The increase in population would result in some development of private lands near Baggs and Dixon that are floodplains. The environmental effects would be mainly of local nature, with destruction of areas that are now used for agriculture and provide habitat for wildlife.

Alluvial Valley Floors

The stream channels of Savery Creek and the Little Snake River are underlain by unconsolidated stream-laid deposits. Irrigation is practiced on lands along the streams. According to guidelines of the regulating agencies, lands along both streams probably would be classified as alluvial valley floors

The proposed mines would cause very little disturbance of the valley floors and would have negligible impact on them.

TRANSPORTATION

Transportation Systems for Mining Operations, Railroads, and Highways

Introduction

Within the project area, there are six county-maintained roads, Wyoming State Highway 70, three telephone lines, and two powerlines.

Wyoming State Highway 70 is a paved, two-lane, secondary highway running eastward from Baggs through the Little Snake River Valley. Average daily traffic (ADT) east of Baggs is 340. State Highway 70 continues eastward over the Sierra Madres to Encampment, Wyoming, as a gravel surface forest highway. This portion is closed during the winter months. Wyoming State Highway 789/Colorado State Highway 13 is the major north-south road. It connects with Wyoming State Highway 70 at Baggs. ADT between Baggs and I-80 is 700; ADT between Baggs and Craig, Colorado, is 1,400.

Affected Environment

There are four major highways in the region that would carry workers and supplies to the proposed Savery mine from surrounding settlement areas. Wyoming State Highway 789 from Creston Junction to Baggs, Wyoming, is a two-lane rural route of generally straight alignment, approximately 51 miles in length. I-80 from Rawlins to Creston Junction, Wyoming, is a four-lane divided highway and the major east-west highway route in southern Wyoming. This segment is approximately 25 miles in length. Wyoming State Highway 789 and Colorado State Highway 13, a two-lane rural route, follows a northerly alignment from Craig, Colorado, to Baggs, Wyoming, approximately 41 miles in length.

Commuting distances from various communities to the mine area are given below:

Rawlins, Wyoming	91 miles
Wamsutter, Wyoming	80 miles
Baggs, Wyoming	15 miles
Dixon, Wyoming	8 miles
Savery, Wyoming	3 miles
Craig, Colorado	56 miles

A two-lane dirt road provides access from Savery, Wyoming, to the proposed surface facilities, a distance of approximately 3 miles. This road would have to be paved and its alignment improved prior to the start of construction of mine facilities.

Impacts resulting from employment and population increases are projected from settlement patterns given in the Socioeconomic section of this document. Each person employed at the Savery mine probably would generate two auto trips per day (one commute trip each way), and all other population increases (induced, indirect, and general population) would generate 0.80 auto trips per day. Traffic mix (i.e., trucks versus cars) and traffic increases within corporate limits have not been estimated.

Environmental Consequences

Development Alternative. If coal were developed from the Savery PRLAs, three categories of improvements would be required on local transportation systems:

1. A system of roads and conveyors to transport workers, equipment, and coal to the surface facilities in the south area would be built if coal were developed in the north and southeast areas.

2. A rail transportation system would be constructed to carry coal from the mine facilities to existing rail lines.

3. Road design improvements and increased road maintenance costs would occur from population increases resulting from the mine and related employment.

Mining Operations Transportation Systems. If 4 $\overline{M}$TY of coal were produced from the Savery PRLAs, no transportation system would be required beyond local service and maintenance roads. However, if 7 $\overline{M}$TY were produced, a system of roads and conveyors to transport workers, equipment, and coal between the northern area, the southeast area, and the southern area would be required. Road and conveyor systems would parallel each other from the northern to the southern area (approximately 6 miles). The required width to accommodate both systems would be 75 feet; consequently, 54.55 acres would be required for these two systems.

Rail Transportation System. A rail system to transport coal to markets outside the region would be required. General design characteristics of the rail line would include:

1. Single track with major sidings every 10 to 20 miles.

2. Right-of-way width of 150 feet.

3. Maximum grade of 1 percent, maximum curvature of 3 percent.

4. Average unit train consisting of 110 cars, each having a capacity of 100 tons.

Two possible routes, A and B, from the Savery PRLAs to existing rail lines are being evaluated.

Route A would leave the surface facilities and travel along Savery Creek. The line would turn west at the Little Snake River and follow the river to Wyoming State Highway 789 at Baggs. The line would then turn north and follow the general alignment of the state highway to where it would join with the Union Pacific main line at Creston Junction, Wyoming.

Route B would leave the surface facilities and travel along Savery Creek. The line would turn west at the Little Snake River and follow it to Wyoming State Highway 789 at Baggs. The line would then turn south and follow the general alignment of the state highway into Colorado where it would join with the Rio Grande main line at Craig, Colorado.

Total acres disturbed would range from about 800 acres for alternative B to 1,000 acres for alternative A.

Although 10 miles shorter in length, Route B would require rail crossings at the Little Snake River, four minor streams, Wyoming State Highway 70, and U.S. Highway 40 in Craig. Route A would require fewer stream crossing and could, therefore, be about as cost effective as Route B.

Highways. Under the 4 $\overline{M}$TY scenario, Wyoming State Highway 70, Colorado State Highway 13, and Wyoming State Highway 789 would receive the greatest increase in use because of the Savery project. Major reconstruction of Wyoming State Highway 70 would be necessary since ADT increases attributable to the Savery project would range between 392 and 423 percent (from 2,728 to 2,877 ADT) in the peak year, 1999. Highway widening projects would be necessary on Wyoming State Highway 789 and Colorado State Highway 13 since ADT increases attributable to the Savery project are projected at 40 and 65 percent.

Under the 7 $\overline{M}$TY scenario, highways would be impacted in the same order as the 4 $\overline{M}$TY scenario. Those improvements indicated under the 4 $\overline{M}$TY scenario would be the same for this scenario, with the exception of possible reconstruction of part of Colorado State Highway 13.

No Development Alternative. If coal were not developed from the Savery PRLAs, changes to the local transportation systems would not be required. Increased regional highway traffic because of energy development and related population is not expected to place highway use beyond acceptable service levels.

Irreversible and Irretrievable Commitments of Resources

All capital investments for transportation would be an irretrievable commitment of funds.

All transportation systems built would be an irreversible commitment of resources.

APPENDIX 1

PERMITS AND APPROVALS REQUIRED TO CONSTRUCT AND OPERATE VARIOUS INDUSTRIAL FACILITIES IN WYOMING

	Permit/Approval	Permitting Authority
1.	Industrial Siting Permit	Industrial Siting Council
2.	Certificate of Public Convenience and Necessity	Public Service Commission
3.	Air Quality Construction Permit	Air Quality Division, Wyoming Department of Environmental Quality (DEQ)
4.	Air Quality Operating Permit	Air Quality Division, Wyoming DEQ
5.	Permit to Mine	Land Quality Division, Wyoming DEQ
6.	License to Mine	Land Quality Division, Wyoming DEQ
7.	In-Situ Permit to Mine	Land Quality Division, Wyoming DEQ
8.	Mining Plan for Fill Material for Dam	Land Quality Division, Wyoming DEQ
9.	Approval for Construction or Enlargement of Reservoir	State Engineer
10.	Approval of Change of Use and Point of Diversion-Inundated Rights	State Engineer
11.	Review of Water Supply and Yield Analysis	State Engineer
12.	Groundwater Appropriation	State Engineer
13.	Approval of Water Pipeline	State Engineer
14.	Reservoir Permit - Fresh Water Holding Pond	State Engineer
15.	Reservoir Permit - Waste Water Evaporation Pond	State Engineer
16.	Reservoir Permit - Coal Storage Runoff Retention Pond	State Engineer
17.	Reservoir Permit - Plant Site Runoff Retention Pond	State Engineer
18.	Reservoir Permit - Ash Disposal Ponds	State Engineer
19.	Reservoir Permit - Sediment Ponds	State Engineer
20.	Temporary Water Rights for Construction	State Engineer
21.	National Pollutant Discharge Elimination System (NPDES) Permits	Water Quality Division, Wyoming DEQ

APPENDIX 1—CONTINUED

	Permit/Approval	Permitting Authority
22.	Permit to Construct, Install or Modify Public Water Supplies and Wastewater Facilities	Water Quality Division, Wyoming DEQ
23.	Groundwater Pollution Control Permit	Water Quality Division, Wyoming DEQ
24.	Permit to Construct Waste Water Pond	Water Quality Division, Wyoming DEQ
25.	Permit to Construct Sediment Control Structures	Water Quality Division, Wyoming DEQ
26.	Approval of Sewage Treatment Plant	Water Quality Division, Wyoming DEQ
27.	Approval of Potable Water Supply for Plant Personnel	Water Quality Division, Wyoming DEQ
28.	Approval of Spill Prevention Control and Countermeasure Plan	Water Quality Division, Wyoming DEQ
29.	Solid Waste Disposal Permit	Solid Waste Management Division, Wyoming DEQ
30.	Utility Crossing Permits for Transmission Lines and Pipelines	Highway Department
31.	Approach Permit	Highway Department
32.	Easements for Transmission Lines, Pipelines, and Inundated Lands on State Lands	State Land Board
33.	Certificates of Competency	State Mine Inspector
34.	Notification of Opening a New Mine	State Mine Inspector

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COORDINATION WITH OTHER AGENCIES

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Federal

U.S. Department of Agriculture

Forest Service

U.S. Department of Interior

Fish and Wildlife Service

Minerals Management Service

Office of Surface Mining

U.S. Geological Survey

State

Colorado Division of Planning

Colorado Division of Wildlife

Department of Environmental Quality

Wyoming Game and Fish Department

Wyoming Highway Department

Local

Baggs City Council

Carbon County Planning and Development

Dixon City Council

Moffat County Planning Office

Rawlins City Council

Town of Wamsutter

PUBLIC PARTICIPATION

The following organizations, companies, and individuals were consulted or expressed interest in the Savery PRLAs.

Organizations

Carbon County Economic Development Association

Wyoming Outdoor Council

Companies

Arch Mineral Corporation

Century 21

Energy Housing, Inc.

Daily Times

Gulf Mineral Resources Company

Snake River Press

Valley Cable TV

Western United Realty

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P.S. Weber

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GLOSSARY

ALLUVIAL VALLEY FLOOR. A stream or river valley containing recently deposited, unconsolidated materials (alluvium) in its stream bed or associated floodplains. Such areas are often subirrigated by water within the alluvium.

ALLUVIUM. The loose materials eroded, transported, and deposited by streams; an important constituent of shelf deposits.

AQUIFERS. Rock or unconsolidated material below the surface of the earth that is capable of holding, transporting, and, if tapped, supplying water.

AS-RECEIVED ANALYSIS. The physical or chemical composition of a material as it is found or as it is produced.

CONE OF DEPRESSION. The depression, roughly conical in shape, produced in a water table or potentiometric surface by pumping or artesian flow.

CRUCIAL WINTER RANGE. Refers to the range or habitat that supports the base population during a severe winter. Animals are usually forced onto this limited range because of surrounding snow depth.

DANCING GROUND. Refers to a traditional, site-specific breeding area for sharp-tailed grouse. Behavioral responses of the birds would give an observer the impression the birds were dancing.

DATA ANALYSIS UNIT. Refers to a big game herd unit. All individuals of a given species in a data analysis unit (DAU) constitute a population. There is little interchange of animals between DAUs.

DISSOLVED SOLIDS. Chemical compounds that have dissolved in a liquid medium.

DRAWDOWN. The amount of drop in the local water table around a well.

EVAPOTRANSPIRATION. Discharge of water from the earth's surface to the atmosphere by evaporation from lakes, streams, and soil surfaces and by transpiration from plants.

FINAL SHOWING. One of the requirements of processing PRLAs that must be provided by the applicant. The final showing consists of the estimated costs of mining the coal given the stipulation measure.

HYDROLOGICAL CONNECTION. Two separate groundwater systems that have enough intermixing so that one system can affect the other one in quality, quantity, etc.

HYDRAULIC GRADIENT. The slope of the free water surface of a stream.

INITIAL SHOWING. One of the requirements for processing a PRLA that must be provided by the applicant. The initial showing consists of: (1) coal quantity and quality data; (2) the location of proposed development and mining operations; and (3) mining method.

INFRASTRUCTURE. Equipment and activities that support the economic and residential functions of an area. Examples are schools, police, and water systems.

INSIGNIFICANT IMPACTS. These are those impacts which are not considered significant.

LONGWALL SYSTEM. A method of mining in which the faces are advanced from the shaft toward the boundary, and the roof is allowed to cave in behind the miners as work progresses.

PERCHED AQUIFERS. An aquifer containing unconfined groundwater separated from an underlying main body of groundwater by an unsaturated zone.

POTENTIOMETRIC SURFACE. An imaginary surface that represents the static head of groundwater and is defined by the level to which water will rise.

GLOSSARY

RIPARIAN. Pertaining to the bank or shore of a river, lake, or stream.

ROOKERY. A breeding place or colony of nests.

ROOM AND PILLAR TYPE UNDERGROUND MINING. A mining method in which a portion (generally 50 percent) of the coal is left in place to support mine roof after the excavation of the other portion of the coal. The coal left in place resembles large supporting pillars.

SALMONID. The family of fish that includes the trouts, salmons, whitefishes, and graylings.

SEDIMENT YIELDS. The amount of material eroded from the land surface and delivered to a stream system.

SIGNIFICANT IMPACTS. Significant impacts are defined by their context and intensity. Generally, impacts here are identified in the context of the Savery project area, and the extent these impacts are perceptible beyond the project area. Intensity relates to the degree of affect on public health, safety, and unique characteristics of the area, and the degree of controversy or risk. Impacts may be insignificant individually but significant when added together. An impact which violates a law imposed for the protection of the environment is generally significant.

SOCIAL IMPACT. The difference which energy development makes in the lives of those concerned.

SOCIAL-PSYCHOLOGICAL. Having to do with the psychological consequences for the individual of living and interacting with other people within a particular social-structural system and in a particular cultural context.

SOCIAL STRUCTURE. A more or less integrated system of interacting goups in a community or society which provide the social framework within which the ongoing activities of the community or society are carried out, and which provide the various dimensions defining the overall position of each individual within that community or society.

STAGING AREA. A location where animals congregate, usually before a traditional migration or movement.

STRUTTING GROUND. Refers to a traditional, site-specific breeding area for sage grouse. Behavioral responses of the males would give an observer the impression the birds were strutting.

SUBSIDENCE. The lowering of the strata, including the surface, due to underground excavations.

SUSPENDED SEDIMENT CONCENTRATIONS. The part of the stream that is carried for a long time in suspension.

UNGULATES. Hooved, vegetation-eating mammals.

TRANSPIRATION. The passage of water vapor from a living body through a membrane or pores.

WINTER RANGE. The range or habitat on which wildlife spend the witner.

ACRONYMS AND ABBREVIATIONS

ADT. Average daily traffic

BLM. Bureau of Land Management

CWR. Crucial winter range

DAU. Data analysis unit

DEQ. Department of Environmental Quality

EIS. Environmental impact statement

$\overline{M}$TY. Million tons per year

PRLA. Preference right lease applications

USFS. U.S. Forest Service

USFWS. U.S. Fish and Wildlife Service

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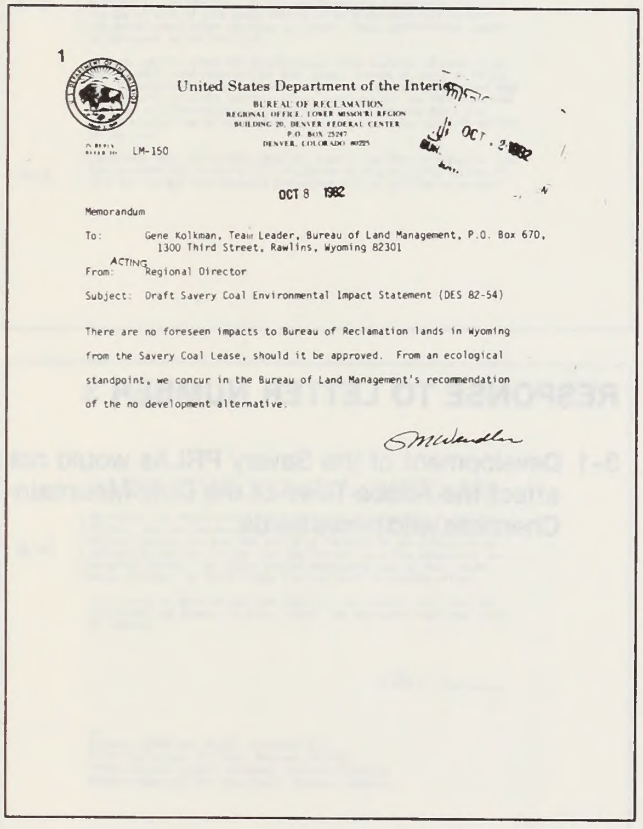
PUBLIC COMMENTS AND RESPONSES ON THE DRAFT ENVIRONMENTAL IMPACT STATEMENT

All letters received have been presented in full. Responses to appropriate comments have been numbered to correspond with each comment. Some letters contain an a, b, and/or c on one number. This represents a group of letters that were received together and deal with the same subject.



1

United States Department of the Interior

BUREAU OF RECLAMATION
REGIONAL OFFICE, LOWER MISSOURI REGION
BUILDING 20, DENVER FEDERAL CENTER
P.O. BOX 25267
DENVER, COLORADO 80225

LM-150

OCT 8 1982

Memorandum

To: Gene Kolkman, Team Leader, Bureau of Land Management, P.O. Box 670, 1300 Third Street, Rawlins, Wyoming 82301

From: ACTING Regional Director

Subject: Draft Savery Coal Environmental Impact Statement (DES 82-54)

There are no foreseen impacts to Bureau of Reclamation lands in Wyoming from the Savery Coal Lease, should it be approved. From an ecological standpoint, we concur in the Bureau of Land Management's recommendation of the no development alternative.

NO RESPONSE

Thank you for your comment.

2

THE STATE OF WYOMING

ED HERSCHLER
GOVERNOR

Wyoming Recreation Commission

1920 THOMES CHEYENNE WYOMING 82002

JAN L. WILSON
Director
777-7695

COMMISSION OFFICERS
E. LAWSON SCHWOPE
PRESIDENT
900 Foster Avenue
Cheyenne 82001

RICK KILMER
VICE PRESIDENT
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Lusk 82225

MRS. ROBERT FRISBY
TREASURER
2307 Hanover Ave
Cody 82414

MEMBERS
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Rawlins 82301

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P.O. Box 172
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LARRY BIRLEFFI
878 E. Apache
Cheyenne 82001

JACK D. OSMOND
P.O. Box 378
Thayne 83127

ALBERT PILCH
P.O. Box 40
Evanston 82930

DAN WADIA
1017 Victoria
Sheridan 82801

September 23, 1982

SEP 24 1982
BUREAU OF LAND MANAGEMENT
RAWLINS DISTRICT WYO

Gene Kolkman
Savery Coal EIS Team Leader
Bureau of Land Management
P.O. Box 670
Rawlins, Wyoming 82301

Dear Mr. Kolkman,

An issue not addreesed in the Draft EIS and one which would further support the no development alternative is the impact the proposed mining development would have on cultural resource sites.

Few prehistoric sites are known to exist in the area but this is because very few surveys have been conducted and sites are difficult to locate in the dense vegetation and ground cover. The area is considered to have a high potential for prehistoric sites because of its suitability for hunting and collecting roots, berries and other food resources. The river valleys would also serve as a natural transportation route through the area.

Development of the mine would likely impact archeological and historic sites directly, and indirect effects from new roads, housing and community facilities and increased population would also occur. We support the No Development Alternative.

Sincerely,

Richard Bryant

Richard Bryant
Compliance Archeologist

RLB:kim

NO RESPONSE

Thank you for your comment.

3

References
1792 (931)
Savery Project

WHOA!

WILD HORSE ORGANIZED ASSISTANCE INC.
A Foundation for the Welfare of Wild Free-Roaming Horses and Burros

P.O. Box 555
Reno, Nevada 89504
Telephone 323-1908
Area Code 702

BOARD OF TRUSTEES
DAVID B. BELDING
JACK C. McELWEE
GORDON W. HARRIS
SELTON P. MOURAS
GERTRUDE SBONN, Honorary
In Memoriam
LOUISE C. HARRISON
VELMA B. JOHNSTON "Wild Horse Annie"

Kathryn Cushman
Box 26
Canterbury, New Hampshire 03224
October 27, 1982

Gene Kolkman Team Leader
Bureau of Land Management
P.O. Box 670
1300 Third Street
Rawlins, Wyoming 82301

Dear Mr. Kolkman:

Thank you for the opportunity to comment on the Savery Coal Environmental Impact Statement, Draft.

3-1 Does development of the Savery area affect the Adobe Town or the Doty Mountain Cherokee wild horse herds in any way? If the answer is yes, I would like specific information as to how wild horses would be impacted.

There are many negative effects involved. Much wildlife habitat will be disturbed or lost. Due to the environmental effects WHOA opposes increased development of the Savery area.

Sincerely,

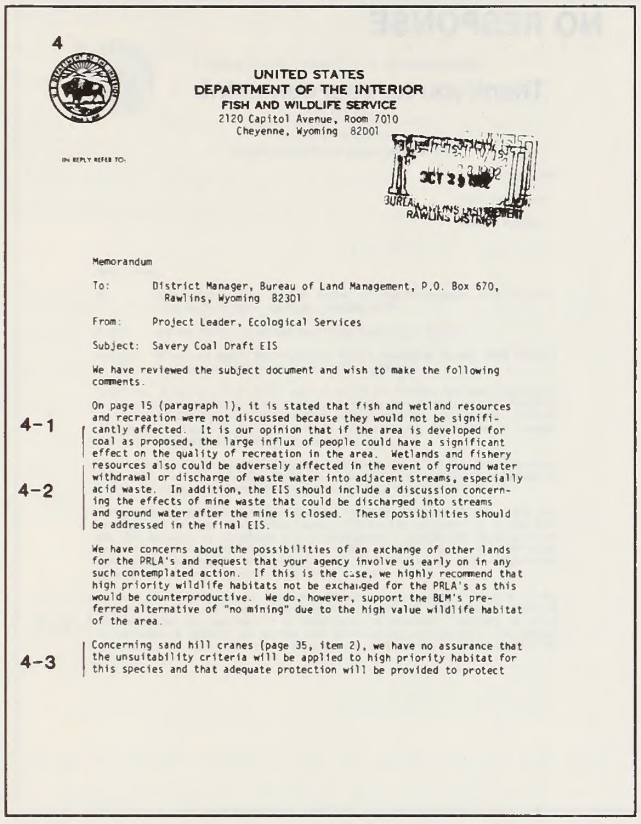
Kathryn Cushman

Kathryn Cushman
WHOA

cc: Dawn Lappin, Director, WHOA

RESPONSE TO LETTER NUMBER 3

3-1 Development of the Savery PRLAs would not affect the Adobe Town or the Doty Mountain-Cherokee wild horse herds.



4

UNITED STATES
DEPARTMENT OF THE INTERIOR
FISH AND WILDLIFE SERVICE
2120 Capitol Avenue, Room 7010
Cheyenne, Wyoming 82001

IN REPLY REFER TO:

Memorandum

To: District Manager, Bureau of Land Management, P.O. Box 670, Rawlins, Wyoming 82301

From: Project Leader, Ecological Services

Subject: Savery Coal Draft EIS

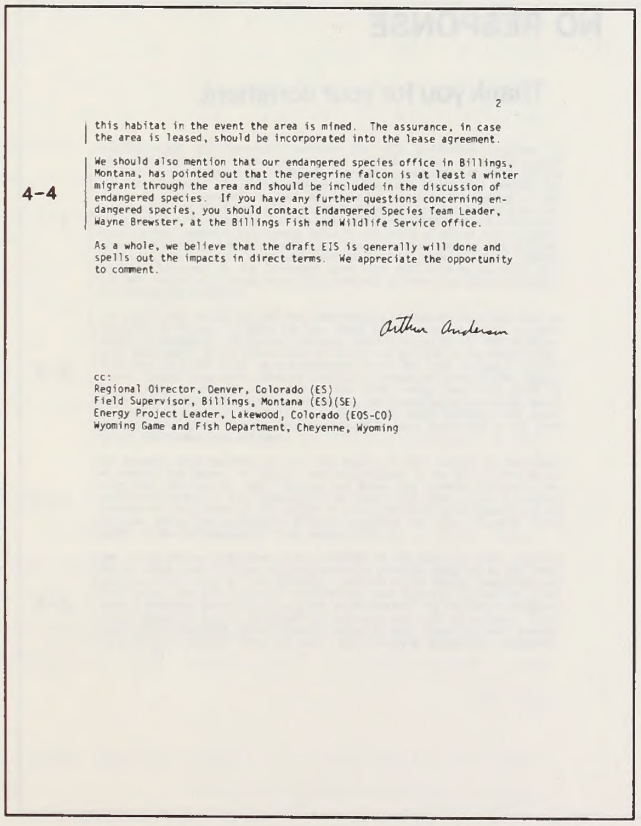
We have reviewed the subject document and wish to make the following comments.

4-1 On page 15 (paragraph 1), it is stated that fish and wetland resources and recreation were not discussed because they would not be significantly affected. It is our opinion that if the area is developed for coal as proposed, the large influx of people could have a significant effect on the quality of recreation in the area. Wetlands and fishery resources also could be adversely affected in the event of ground water withdrawal or discharge of waste water into adjacent streams, especially

4-2 acid waste. In addition, the EIS should include a discussion concerning the effects of mine waste that could be discharged into streams and ground water after the mine is closed. These possibilities should be addressed in the final EIS.

We have concerns about the possibilities of an exchange of other lands for the PRLA's and request that your agency involve us early on in any such contemplated action. If this is the case, we highly recommend that high priority wildlife habitats not be exchanged for the PRLA's as this would be counterproductive. We do, however, support the BLM's preferred alternative of "no mining" due to the high value wildlife habitat of the area.

4-3 Concerning sand hill cranes (page 35, item 2), we have no assurance that the unsuitability criteria will be applied to high priority habitat for this species and that adequate protection will be provided to protect



2

this habitat in the event the area is mined. The assurance, in case the area is leased, should be incorporated into the lease agreement.

4-4 We should also mention that our endangered species office in Billings, Montana, has pointed out that the peregrine falcon is at least a winter migrant through the area and should be included in the discussion of endangered species. If you have any further questions concerning endangered species, you should contact Endangered Species Team Leader, Wayne Brewster, at the Billings Fish and Wildlife Service office.

As a whole, we believe that the draft EIS is generally will done and spells out the impacts in direct terms. We appreciate the opportunity to comment.

Arthur Anderson

cc:
Regional Director, Denver, Colorado (ES)
Field Supervisor, Billings, Montana (ES)(SE)
Energy Project Leader, Lakewood, Colorado (EOS-CO)
Wyoming Game and Fish Department, Cheyenne, Wyoming

RESPONSES TO LETTER NUMBER 4

4-1 The large influx of people would considerably affect the quality of recreation in the area. A Recreation section has been added to the final EIS.

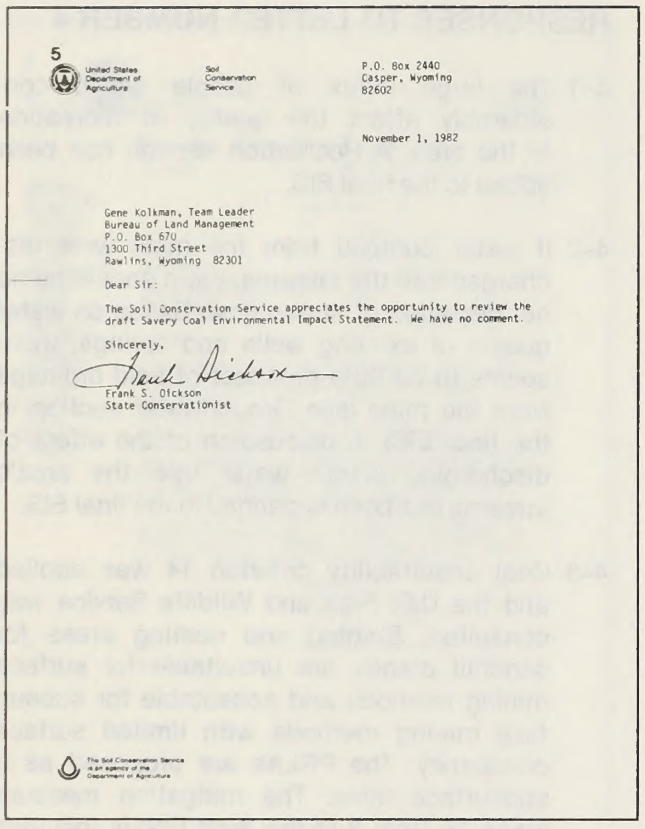
4-2 If water pumped from the mine were discharged into the streams, there should be no net depletion of streamflow. Based on water quality of existing wells and springs, there seems to be little prospect of acid drainage from the mine (see Groundwater section in the final EIS). A discussion of the effect of discharging waste water into the area's streams has been expanded in the final EIS.

4-3 Coal unsuitability criterion 14 was applied and the U.S. Fish and Wildlife Service was consulted. Staging and nesting areas for sandhill cranes are unsuitable for surface mining methods and acceptable for subsurface mining methods with limited surface occupancy. The PRLAs are proposed as a subsurface mine. The mitigation measure (page 35, item 2 of the draft EIS) is included to identify any staging and nesting areas not already known. As with known areas, these areas would also be unsuitable for surface mining methods and acceptable for subsurface mining methods with limited surface occupancy.

Also, see the preceding paragraph and item 1d on page 35 of the draft EIS for further discussion of protective measures for sandhill crane staging and nesting areas.

4-4 The comment is correct. Peregrine falcons have been discussed in the final EIS. This species has been discussed and analyzed in the biological assessment. We will complete consultation with your Billings office as required by the Endangered Species Act.

5



United States Department of Agriculture

Soil Conservation Service

P.O. Box 2440
Casper, Wyoming
82602

November 1, 1982

Gene Kolkman, Team Leader
Bureau of Land Management
P.O. Box 670
1300 Third Street
Rawlins, Wyoming 82301

Dear Sir:

The Soil Conservation Service appreciates the opportunity to review the draft Savery Coal Environmental Impact Statement. We have no comment.

Sincerely,

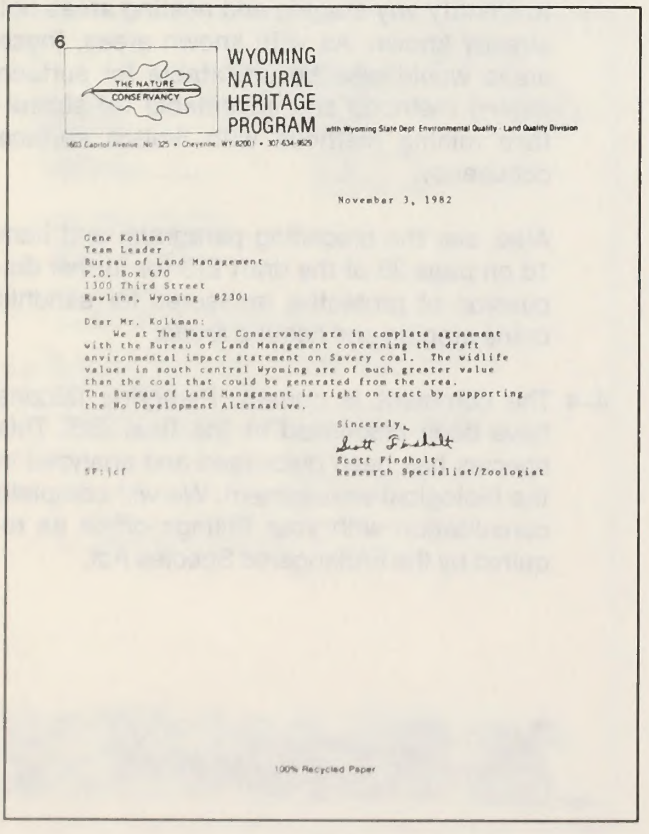
Frank S. Dickson
State Conservationist

The Soil Conservation Service is an agency of the Department of Agriculture

NO RESPONSE

Thank you for your comment.

6



THE NATURE CONSERVANCY

WYOMING NATURAL HERITAGE PROGRAM with Wyoming State Dept Environmental Quality Land Quality Division

1603 Capitol Avenue No. 325 • Cheyenne WY 82001 • 307-634-9629

November 3, 1982

Gene Kolkman
Team Leader
Bureau of Land Management
P.O. Box 670
1300 Third Street
Rawlins, Wyoming 82301

Dear Mr. Kolkman:

We at The Nature Conservancy are in complete agreement with the Bureau of Land Management concerning the draft environmental impact statement on Savery coal. The widlife values in south central Wyoming are of much greater value than the coal that could be generated from the area. The Bureau of Land Management is right on tract by supporting the No Development Alternative.

Sincerely,

Scott Findholt
Research Specialist/Zoologist

SF:jcf

100% Recycled Paper

NO RESPONSE

Thank you for your comment.

7

United States Department of the Interior

BUREAU OF MINES

P. O. BOX 25086
BUILDING 20, DENVER FEDERAL CENTER
DENVER, COLORADO 80225

Intermountain Field Operations Center

November 3, 1982

Your reference:
1792 (931)
Savery Project

Memorandum

To: Gene Kolkman, Team Leader, Bureau of Land Management, P.O. Box 670, 1300 Third Street, Rawlins, Wyoming 82301

From: Acting Chief, Intermountain Field Operations Center

Subject: Review of Draft Environmental Impact Statement Savery Coal Project Preference Right Lease Applications (PRLA's)

Personnel of the Bureau of Mines have reviewed the subject document concerning proposed coal production from Preference Right Lease Applications (PRLA's) held by Gulf Oil Corporation in Carbon County, Wyoming. The Bureau of Mines is primarily concerned with the effects this proposal would have on mineral resources and their development in the area.

Known mineral resources in Carbon County include coal, oil and gas, and uranium. Coal resources in the Savery area would be substantially impacted by either alternative proposed by the Bureau of Land Management (BLM).

Alternatives presented in this document include only development and no-development options. The no-development alternative is preferred by the BLM. The BLM decision to recommend the no-development alternative appears to be based on: 1) expected socioeconomic impacts in the Savery area and other communities, 2) impacts on wildlife, and 3) a desire to sell competitive Federal coal leases in the area north of Savery.

7-1 On page 15, a statement is made that "Conttol of community expansion is the purview of state and local government not the federal government." Much of the reasoning for backing the no-development alternative, however, is based on anticipated impacts on Savery and surrounding communities. The belief that the area is unable to cope with the anticipated rapid expansion of

population and the necessary services for that population increase is expressed frequently in the report. The initial concern for socioeconomic impacts on the Savery area fails to consider any development plans by the operating company. The mining company proposing the Savery Mine Project, no doubt, is well aware of the lack of community services and housing in the Savery area. In the recent past, development companies have assumed a greater responsibility in providing for the needs of boom towns. Considerable preplanning and community development prior to the start of actual mining operations in other sparsely populated areas has alleviated many of the problems of boom towns, such as those expressed by the BLM. The operating company certainly is aware of the community needs that will have to be dealt with and must assure that these needs are provided in order to insure a stable and productive workforce.

7-1

The report also states (p. 20) that when workers ultimately leave the area on cessation of mining, in 2045, the town would become stagnant and an economic burden on taxpayers. The report, however, further states (p. 9) that development could begin in the areas north of Savery and proceed to the Savery area. If Savery is established as a population center for coal mining in Carbon County, there is no reason that it could not continue to serve in that capacity as coal development proceeded to the north rather than from north to south. No matter where development starts, the Savery area eventually would be forced to cope with population increases. Few would disagree that planning and development for the long term would be more beneficial to the area than a short-term boom and bust.

7-2

The document also mentions (p. 25) the impact of this project on the towns of Rawlins and Hanna. In theory, coal development in the Savery area would delay coal development near Rawlins and Hanna and further aggravate the current recession in both communities, at least till 1995. This is another concern for consideration and action by state and local governments, and it does not affect the applicant's ability to produce coal from this mine "at a profit in an environmentally sound manner." (p. 1).

7-3

The second concern expressed is for wildlife in the planning area. Crucial winter range areas for elk and deer would be directly impacted by the human population but would be only minimally impacted by the mining operations and facilities. The full impact on wildlife by human activity will not be known until a wildlife study now in progress is completed. The ability of adjacent winter ranges to support displaced wildlife also currently is unknown. Until studies are completed, no conclusions should be made about the full impacts on wildlife resulting from the mine and resulting population increases.

7-4

2

RESPONSES TO LETTER NUMBER 7

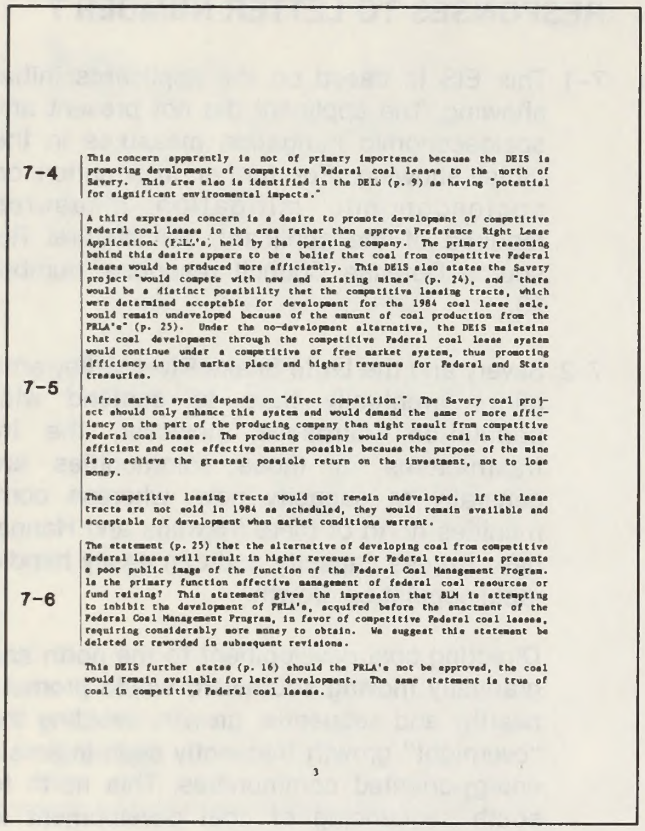
7-1 This EIS is based on the applicants initial showing. The applicant did not present any socioeconomic mitigation measures in the initial showing. For further information on socioeconomic mitigation measures required of the applicant, see Natural Resource Defense Council response, number 23.

7-2 Savery and the Little Snake River Valley area might eventually have to contend with population increases; however, the infrastructures of those communities are generally at capacity now, whereas communities north of there (Rawlins and Hanna) have excess capacity and can easily handle rapid population growth.

Directing coal development to the north and gradually moving southward would promote healthy and sequential growth, avoiding the "overnight" growth frequently seen in small, energy-oriented communities. This north to south sequencing of coal development is long-term planning, consistent with your suggestion.

Rawlins and Hanna have, through the years, become dependent on the coal industry. Hanna, for example, was a town of 460 people before coal mining became a leading industry in the Hanna Basin. During peak production in 1980, Hanna grew to a population of 2,280 (1980 Census). Most of these people were involved, in one way or another, with coal mining. Today, production has dropped by over 50 percent, and BLM estimates show total population in Hanna to be somewhere around 2,000. Rawlins, Wyoming, located about 50 miles due north of the Savery PRLAs, has also experienced similar economic setbacks from lower coal production in the Hanna Basin.

If these PRLAs were developed the Savery area would also become dependent on the coal industry subjecting this additional area to the production cycles of the industry.



7-4 This concern apparently is not of primary importance because the DEIS is promoting development of competitive Federal coal leases to the north of Savery. This area also is identified in the DEIs (p. 9) as having "potential for significant environmental impacts."

A third expressed concern is a desire to promote development of competitive Federal coal leases in the area rather than approve Preference Right Lease Applications (PRLA's, held by the operating company. The primary reasoning behind this desire appears to be a belief that coal from competitive Federal leases would be produced more efficiently. This DEIS also states the Savery project "would compete with new and existing mines" (p. 24), and "there would be a distinct possibility that the competitive leasing tracts, which were determined acceptable for development for the 1984 coal lease sale, would remain undeveloped because of the amount of coal production from the PRLA's" (p. 25). Under the no-development alternative, the DEIS maintains that coal development through the competitive Federal coal lease system would continue under a competitive or free market system, thus promoting efficiency in the market place and higher revenues for Federal and State treasuries.

7-5

A free market system depends on "direct competition." The Savery coal project should only enhance this system and would demand the same or more efficiency on the part of the producing company than might result from competitive Federal coal leases. The producing company would produce coal in the most efficient and cost effective manner possible because the purpose of the mine is to achieve the greatest possible return on the investment, not to lose money.

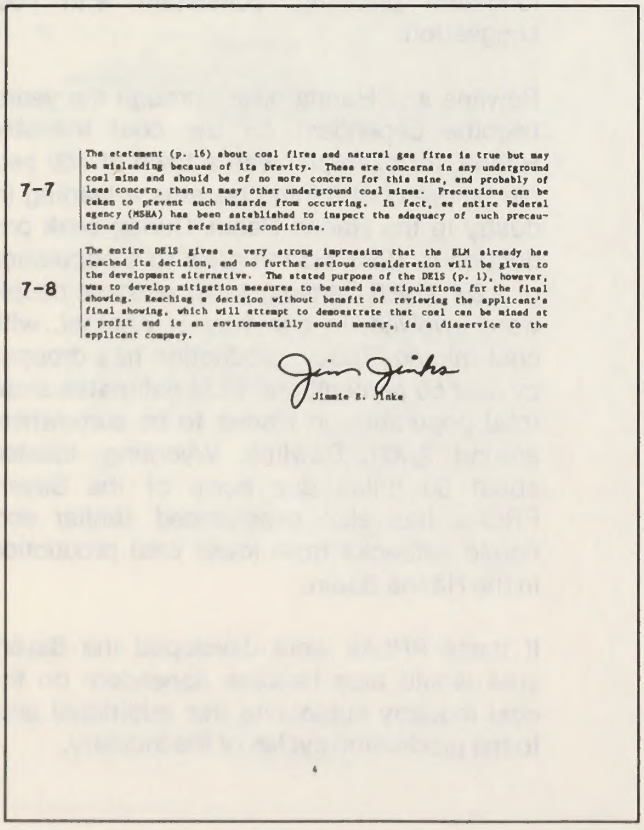
The competitive leasing tracts would not remain undeveloped. If the lease tracts are not sold in 1984 as scheduled, they would remain available and acceptable for development when market conditions warrant.

The statement (p. 25) that the alternative of developing coal from competitive Federal leases will result in higher revenues for Federal treasuries presents a poor public image of the function of the Federal Coal Management Program. Is the primary function effective management of federal coal resources or fund raising? This statement gives the impression that BLM is attempting

7-6 to inhibit the development of PRLA's, acquired before the enactment of the Federal Coal Management Program, in favor of competitive Federal coal leases, requiring considerably more money to obtain. We suggest this statement be deleted or reworded in subsequent revisions.

This DEIS further states (p. 16) should the PRLA's not be approved, the coal would remain available for later development. The same statement is true of coal in competitive Federal coal leases.

3



7-7 The statement (p. 16) about coal fires and natural gas fires is true but may be misleading because of its brevity. These are concerns in any underground coal mine and should be of no more concern for this mine, and probably of less concern, than in many other underground coal mines. Precautions can be taken to prevent such hazards from occurring. In fact, the entire Federal agency (MSHA) has been established to inspect the adequacy of such precautions and assure safe mining conditions.

The entire DEIS gives a very strong impression that the BLM already has reached its decision, and no further serious consideration will be given to

7-8 the development alternative. The stated purpose of the DEIS (p. 1), however, was to develop mitigation measures to be used as stipulations for the final showing. Reaching a decision without benefit of reviewing the applicant's final showing, which will attempt to demonstrate that coal can be mined at a profit and in an environmentally sound manner, is a disservice to the applicant company.

Jimmie E. Jinks

4

As a result of this situation, one of the land-use planning goals was to attempt to find coal near Rawlins and Hanna which could feasibly be leased and developed in the early 1990s, helping to reduce the economic hardship and stabilize these towns, while avoiding the creation of a third area dependent on the coal industry.

7-3 Neither our land-use decisions nor this EIS reject the PRLAs. Instead, on page 9 of the draft EIS we note that if it were determined that the applicant were entitled to a lease on the area, "BLM would atempt to negotiate with the applicant for an equitable exchange for his right to lease the coal (in the Savery area) for other commodities."

The impact on Rawlins and Hanna is one factor in the decision to attempt an exchange, but it would not be a factor in considering the final showing.

7-4 As mentioned in your letter, there is a concern for crucial wildlife winter ranges. The Savery PRLAs are in a crucial elk winter range. Two other tracts (near Rawlins) are also in the same crucial winter range. Although we believe that the possibility exists for one or perhaps two of these three tracts to be developed, we do not believe that all three can be developed at the same time. Consequently, during our recent land-use planning update, we were faced with choosing the most optimal area where development could occur. After consulting with state and local government, we concluded that, if it were possible to develop coal within this crucial elk winter range, the development should begin in the north.

7-5 Our preference for the competitive tracts over these PRLAs is related to location of the competitive tracts as it does with their competitive nature. The competitive tracts are closer to existing transportation systems and communities that need the increased growth.

We have changed the coal market discussion in the Economic section.

7-6 We regret that our discussion of competitive leasing generating higher federal and state revenues gives the reader the impression that that is the primary function of federal coal management. Indeed, the Federal Coal Management Program has many functions and goals, many of which have been noted in the EIS and within this response. However, one of those functions is to generate funds for federal and state treasuries. These revenues have played a significant role in Wyoming and Colorado and the potential loss of these revenues is one of several concerns raised during the scoping process.

7-7 We agree with this comment and that these concerns are typical of underground coal mining. We recognize the responsibility of this federal agency (Mine Safety and Health Administration) in setting standards for mine safety.

7-8 Through our land-use planning process, a decision was reached which states, "The Savery project area should not be mined in the foreseeable future. Therefore, if in the processing of the Savery PRLAs it is determined the applicant is entitled to a coal lease, BLM should attempt to negotiate an exchange."

BLM's preferred alternative is therefore the No Development Alternative.

The decision or entitlement to a coal lease is based on the final showing. The final showing will reflect the mitigation measures identified in this EIS. These mitigation measures are deemed reasonable and appropriate.

No decision will be reached without the benefit of reviewing the applicant's final showing. If commercial quantities are shown, the applicant will be entitled to a lease. If the applicant is entitled to a lease, BLM will attempt an exchange. An exchange between BLM and the applicant would have to be in the public interest and mutually agreeable.

8

United States Department of the Interior

GEOLOGICAL SURVEY
RESTON, VA 22092

NOV 4 1982

In Reply Refer To:
EGS-Mail Stop 423

Memorandum

To: Savery Coal Team, Bureau of Land Management
Rawlins, Wyoming

From: Assistant Director for Engineering Geology

Subject: Review of draft environmental statement for Savery Coal, Carbon County, Wyoming, Moffat and Routt Counties, Colorado

We have reviewed the draft statement as requested in the State Director's notice.

8-1 The map of floodplains (map 15) is unnecessarily generalized, apparently being based on an arbitrary width set at 2,500 feet. If the map is based on a specialized definition of "floodplain", this should be given in the Glossary (p. 49). Otherwise, it would seem preferable to delimit the approximate limits of the floodplains by reference to topographic maps.

8-2 Consideration should be given to the potential for any long-term effects on the chemical quality of surface- and ground-water resources that may result from drainage of acid mine water.

8-3 The definition of aquifer (p. 49) should include the concept that an aquifer is capable of transmitting economically significant or useful amounts of water; also the definition of drawdown (p. 49) should include the concept of a decline in the piezometric surface, because confined aquifers will be affected.

for James F. Devine

9

Box 14
Savery, Wyo. 82332
Nov 5, 1982

Bureau of Land Management
P.O. Box 670
Rawlins, Wyo. 82301

Dear Mr. Kelkman:

I am opposed to having a coal mine come into the Savery area. The previously quiet, beautiful valley would no longer be either. The influx of workers would not only overcrowd the schools, towns and roads but would be devastating to the fish and game of the valley. The agricultural backbone would be severed by the transit type of people that would come with the boom of a coal town. Such only our close, caring and protective neighbors would be a minority of the valley.

The year round deer population will be adversely affected as well as the winter range for the large numbers of elk. We have many bald eagles that spend the fall and winter on the creek and surrounding areas, that would be displaced.

I believe the coal in places near established towns and railroads should be used first. With coal sales down in established areas it seems ridiculas to open new mines, especially in an area such as Savery, that is not capable of handling a boom and bust economy.

Please, lets keep coal mines out of the Savery valley.

Sincerely,

Martha Page

RESPONSES TO LETTER NUMBER 8

8-1 We agree that the map was unnecessarily generalized. The map has been deleted and a more comprehensive discussion of the effect of the Savery project has been added to the final EIS.

8-2 Present evidence indicates little potential for acid drainage from the mine. The pH of the receiving waters is also relatively high, and there is considerable buffering capacity (a further discussion is included in the Water Resources section).

8-3 We have modified the definitions as suggested and have added one for Cone of Depression.

NO RESPONSE

Thank you for your comment.

10

714 South Fifth Street
Laramie, Wyoming 82070
15 November 1982

Bureau of Land Management
Rawlins District Office
Rawlins, Wyoming 82301

Dear Sirs:

Although I recently moved to Laramie, I still maintain an active interest in Carbon County because I was long a resident of that county, and because my family still lives there. I have been meaning to write and explain my objections to the opening of a new coal mine in the Little Snake River country, but yesterday I found these two articles face to face in the Laramie Boomerang, and felt they were so eloquent that I should send them instead of a long letter.

I have seen the difficulties of dealing with impact in Hanna, Medicine Bow, Saratoga, Encampment, and Rawlins. I have also, in the past two years, seen the problems of dealing with mine closings, which seem to cause even more human suffering than the initial impact.

How could the BLM possibly consider allowing a new mine to open, when the ones already open are failing? It makes no sense in either economic terms or human terms.

I would therefore like to go on record as strongly opposing the opening of a new mine near Savery, at least until the economic health of the already existing mines is in better shape than it is now.

Sincerely yours,

Edward W. Harris

Edward W. Harris

NO RESPONSE

Thank you for your comment.

11

WYOMING
EXECUTIVE DEPARTMENT
CHEYENNE

ED HERSCHLER
GOVERNOR

November 4, 1982

11/10/82

Mr. Maxwell T. Lieurance
State Director
Bureau of Land Management
P. O. Box 1828
Cheyenne, WY 82001

Dear Mr. Lieurance:

Several state agencies have reviewed the draft Savery Coal environmental impact statement. Their comments are enclosed for your information and consideration.

11-1 If the Bureau of Land Management decides to offer Gulf Minerals a coal lease in a different location, this office requests notification before negotiations for an exchange begins. Early notification could help prevent leasing an area which has a more comolex set of problems.

11-2 The State of Wyoming also requests, if possible, a copy of the "final showing" analysis.

11-3 If the Bureau subsequently leases this tract, the lessee should contact the Land Quality Division of the Wyoming Department of Environmental Quality to insure compliance with Wyoming's mining and reclamation laws and regulations.

Yours sincerely,

EH/wwt

Enclosure

cc: Walt Ackerman
Gene Kolkman

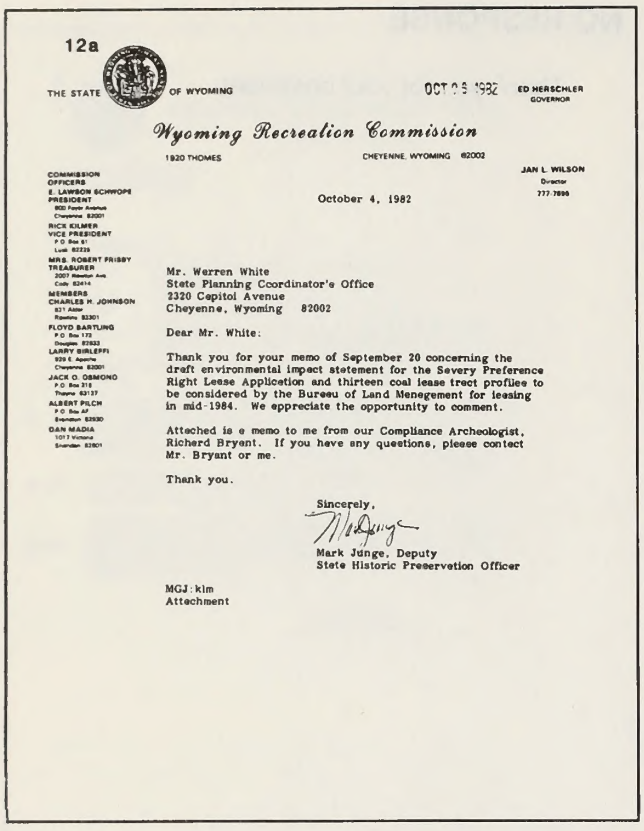
RESPONSES TO LETTER NUMBER 11

11-1 We will consult with your office at the earliest possible time should negotiations begin.

11-2 We will provide the state with all information that is not proprietary.

11-3 The lessee shall comply with state mining and reclamation laws and regulations.

12a



THE STATE OF WYOMING

OCT 0 6 1982

ED HERSCHLER
GOVERNOR

Wyoming Recreation Commission

1920 THOMES CHEYENNE, WYOMING 82002

JAN L. WILSON
Director
777-7896

COMMISSION OFFICERS
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P O Box 172
Douglas 82633
LARRY BURLEFFI
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Cheyenne 82001
JACK O. OSMOND
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Thayne 83127
ALBERT PILCH
P O Box AF
Evanston 82930
DAN MADIA
107 Victoria
Sheridan 82801

October 4, 1982

Mr. Werren White
State Planning Coordinator's Office
2320 Capitol Avenue
Cheyenne, Wyoming 82002

Dear Mr. White:

Thank you for your memo of September 20 concerning the draft environmental impact statement for the Savery Preference Right Lease Application and thirteen coal lease tract profilee to be considered by the Bureau of Land Menegement for leasing in mid-1984. We eppreciate the opportunity to comment.

Attached is e memo to me from our Compliance Archeologist, Richerd Bryant. If you heve sny questions, pleese contect Mr. Bryant or me.

Thank you.

Sincerely,

Mark Junge, Deputy
State Historic Preservetion Officer

MGJ:klm
Attechment

NO RESPONSE

Thank you for your comment.

12b

WYOMING RECREATION COMMISSION

STATE HISTORIC PRESERVATION OFFICE

REVIEW AND COMPLIANCE

Interdisciplinary Staff Comments

Archeology • *History* • *Historical Architecture* • *Recreation Planning*

TO: Mark Junge, Chief

FROM: Richerd Bryant, Compliance Archeologist

DATE: October 4, 1982 (district #2)

RE: Savery Coal DEIS and Thirteen Coal Lease Tract Profilee

I heve reviewed the Severy Coal DEIS previously end heve sent my commente directly to the Bureau of Land Menegement. A copy of my commente are ettached for your informetion.

I heve no epecific comments on the thirteen coal lease tract profilee et this time. Bureau of Land Management and Office of Surfece Mining reguletione require en intensive cultural resource survey of all coal minee before the permit to mine ie iesued. The Wyoming Department of Environmental Quality coordinetes the cultural resource surveye with our etaff. Until these surveye heve been conducted, we heve no specific informetion on archeological or historic eites in the lease areas, and cen meke no recommendatione or comments.

NO RESPONSE

Thank you for your comment.

12c

September 23, 1982

Gene Kolkman
Savery Coal EIS Team Leader
Bureau of Land Management
P.O. Box 870
Rawlins, Wyoming 82301

Dear Mr. Kolkman,

An issue not addressed in the Draft EIS and one which would further support the no development alternative is the impact the proposed mining development would have on cultural resource sites.

Few prehistoric sites are known to exist in the area but this is because very few surveys have been conducted and sites are difficult to locate in the dense vegetation and ground cover. The area is considered to have a high potential for prehistoric sites because of its suitability for hunting and collecting roots, berries and other food resources. The river valleys would also serve as a natural transportation route through the area.

Development of the mine would likely impact archeological and historic sites directly, and indirect effects from new roads, housing and community facilities and increased population would also occur. We support the No Development Alternative.

Sincerely,

Richard Bryant
Compliance Archeologist

RLB:kla

bcc: JLWilson; MGJungo; RLBryant/RF

NO RESPONSE

Thank you for your comment.

13

THE STATE OF WYOMING

NOV 1 1982

EO HERSCHLER
GOVERNOR

Department of Economic Planning and Development

BARRETT BUILDING CHEYENNE, WYOMING 82002 JOHN NILAND
EXECUTIVE DIRECTOR

MEMORANDUM

TO: Warren White
FROM: Joe Evans
SUBJ: Savery Coal EIS
DATE: October 29, 1982

Although I have no expertise in determining whether Gulf Oil Corporation can economically mine commercial quantities of coal from the Savery area, I do have some comments on other aspects of the project.

The numbers the BLM used to estimate the population are in agreement with what we use to estimate population. I also agree that the location of the worker residence would primarily be in the communities in the Little Snake drainage and there is no denying that it would significantly alter the social and economic structure of the area. The towns in the area do not have the present capacity to absorb 4,700 to 8,600 new citizens. However, there are some points that were not discussed in the EIS.

It is true that an extensive capital facility and housing stock expansion would be needed in the area and these facilities could cause economic hardship during the mine shutdown. However the mine life is indicated to be almost sixty years (p.20). With proper precautions to prevent over building, the problem of a "ghost town" could be minimized. The bottom line in this area is really how much the coal company is willing to spend to mitigate the boom and bust cycles, and that has an effect on the competitive price of the coal.

If the mitigation can be accomplished at a reasonable cost, then the change in the social structure becomes the largest single problem. The question of whether growth is wanted or not can only be answered by the local citizens. However, I suspect that as with most areas of Wyoming, there will be many supporters of both growth and non-growth.

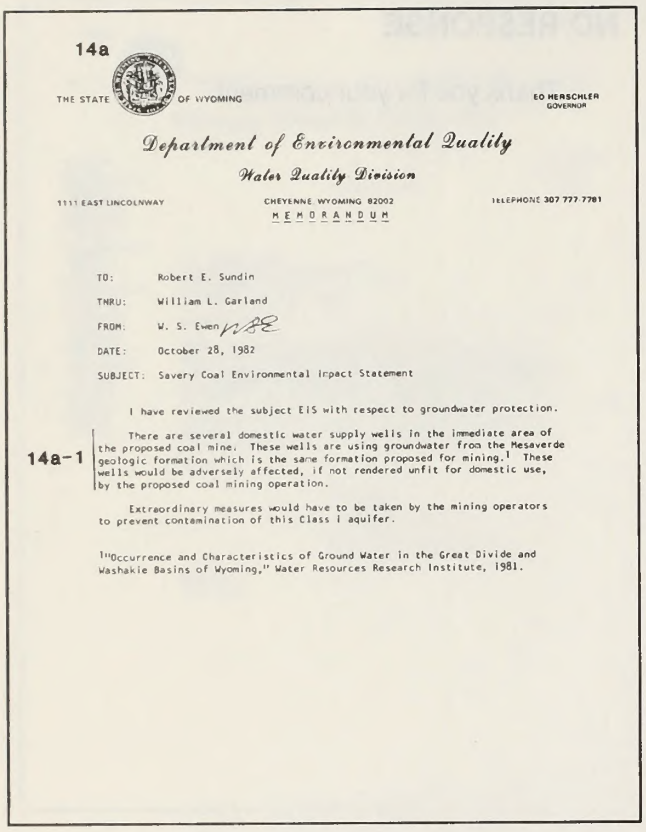
13-1 I would also like to point out a mistake on page 18. The State of Wyoming has no minimum requirement for homesites. Carbon County does have a one acre minimum for homesites with both a well and septic tank, but that obviously does not apply to subdivisions with water and sewer systems.

Administration 777-7287 | Industrial Division 777-7285 | Mineral Division 777-7381 | Planning Division 777-7286 | Water Division 777-7284 | Library 777-6430

RESPONSE TO LETTER NUMBER 13

13-1 Thank you. This point has been changed in the final EIS.

14a



THE STATE OF WYOMING

EO HERSCHLER
GOVERNOR

Department of Environmental Quality

Water Quality Division

1111 EAST LINCOLNWAY CHEYENNE, WYOMING 82002 TELEPHONE 307 777-7781

MEMORANDUM

TO: Robert E. Sundin

THRU: William L. Garland

FROM: W. S. Ewen

DATE: October 28, 1982

SUBJECT: Savery Coal Environmental Impact Statement

I have reviewed the subject EIS with respect to groundwater protection.

14a-1 There are several domestic water supply wells in the immediate area of the proposed coal mine. These wells are using groundwater from the Mesaverde geologic formation which is the same formation proposed for mining.[1] These wells would be adversely affected, if not rendered unfit for domestic use, by the proposed coal mining operation.

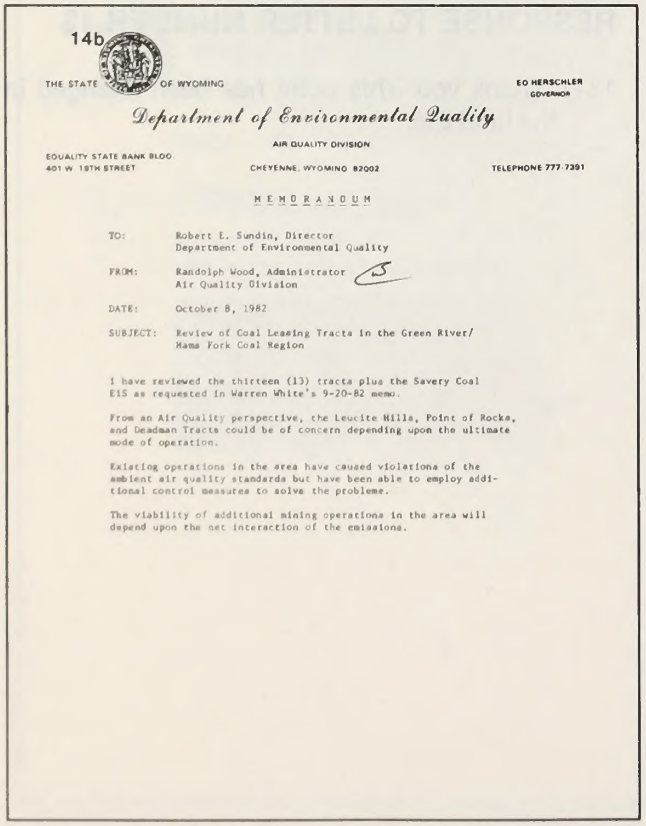
Extraordinary measures would have to be taken by the mining operators to prevent contamination of this Class I aquifer.

[1]"Occurrence and Characteristics of Ground Water in the Great Divide and Washakie Basins of Wyoming," Water Resources Research Institute, 1981.

RESPONSE TO LETTER NUMBER 14

14a-1 The probability is that groundwater would flow toward the mine and would be pumped out. No contamination to off-site wells could result from such flow. Water levels could be lowered in nearby wells or flow could be reduced in nearby springs. Assessment of these impacts requires more site-specific information than is now available. Conflicts with existing groundwater rights would be within the purview of the State Engineer's Office and mitigative measures could be imposed.

14b



THE STATE OF WYOMING

EO HERSCHLER
GOVERNOR

Department of Environmental Quality

AIR QUALITY DIVISION

EQUALITY STATE BANK BLDG.
401 W. 19TH STREET CHEYENNE, WYOMING 82002 TELEPHONE 777-7391

MEMORANDUM

TO: Robert E. Sundin, Director
Department of Environmental Quality

FROM: Randolph Wood, Administrator
Air Quality Division

DATE: October 8, 1982

SUBJECT: Review of Coal Leasing Tracts in the Green River/
Hams Fork Coal Region

I have reviewed the thirteen (13) tracts plus the Savery Coal EIS as requested in Warren White's 9-20-82 memo.

From an Air Quality perspective, the Leucite Hills, Point of Rocks, and Deadman Tracts could be of concern depending upon the ultimate mode of operation.

Existing operations in the area have caused violations of the ambient air quality standards but have been able to employ additional control measures to solve the problems.

The viability of additional mining operations in the area will depend upon the net interaction of the emissions.

NO RESPONSE

Thank you for your comment.

14c

THE STATE OF WYOMING

EO HERSCHLER
GOVERNOR

Department of Environmental Quality

SOLID WASTE MANAGEMENT

401 WEST 19TH STREET
EQUALITY STATE BANK BUILDING

CHEYENNE, WYOMING 82002

TELEPHONE 307-777-7752

MEMORANDUM

TO: Robert E. Sundin, Director

FROM: Timothy Link, Solid Waste Analyst TL

DATE: October 8, 1982

SUBJECT: Savery Preference Right Lease Application and Thirteen Tract Profiles Being Considered For Leasing By Bureau of Land Management in Mid 1984

1) Savery Preference Right Lease Application - No Comment

2) Thirteen Tract Profiles Being Considered For Leasing By Bureau of Land Management:

If disposal of any solid waste material takes place in any non-permitted areas in Wyoming, a solid waste plan will have to be submitted and approved before a permit to construct a disposal site is issued.

ch

NO RESPONSE

Thank you for your comment.

15

THE STATE OF WYOMING

EO HERSCHLER
GOVERNOR

Department of Environmental Quality

LAND QUALITY DIVISION

401 WEST 19TH STREET

TELEPHONE 307-777-7756

CHEYENNE, WYOMING 82002

MEMORANDUM

TO: Robert Sundin, Director

FROM: W.C. Ackerman, Administrator W. C. A.

DATE: September 24, 1982

SUBJECT: Comments on Savery Coal DEIS prepared by the U.S. Department of the Interior

The staff has conducted a review of the referenced document and from the limited data available and our knowledge of this site generated the following comments and recommendations. Obviously, the document is too general to allow this office to conduct a thorough analysis with respect to compliance with the State's mining laws. Equally, this office is in no position to comment on the "preferred alternative" at this time. However, this office would suggest that BLM more fully explain their reason for this being their preferred alternative or deviations therefrom if that is the final decision.

15-1

I. Vegetation

A. Potential Effects on Plant Communities

The DEIS dismisses discussion of vegetation topics with the following statement on Page 15:

"Resources not discussed were not considered to be significantly impacted: ...threatened and endangered plants, visual resources,... wetlands, wilderness areas,... vegetation, areas of critical environmental concern."

15-2

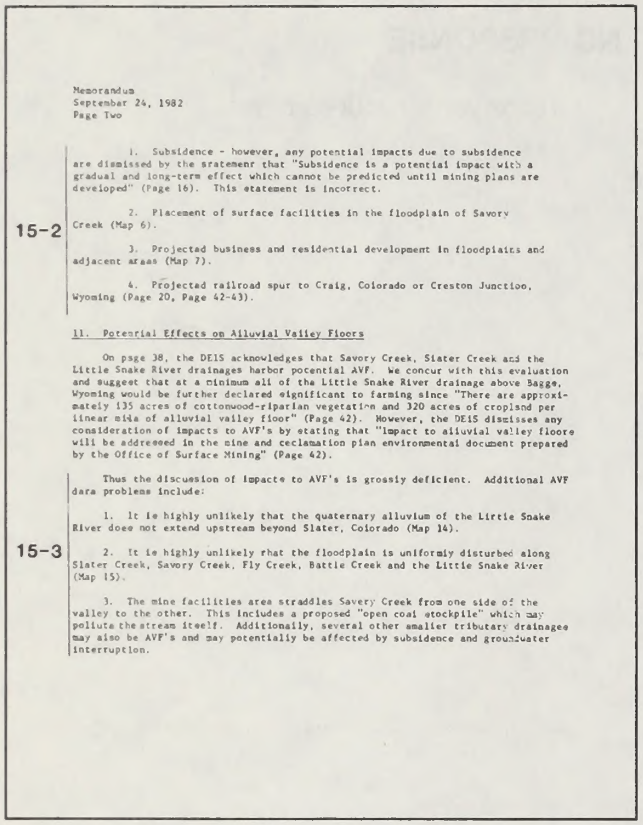
The DEIS provides no criteria for the basis of such dismissals. There will be a substantial possibility of significant affects to plant communities due to:

RESPONSES TO LETTER NUMBER 15

15-1 If the Savery PRLAs were developed, significant impacts would occur when mine employees and the associated increase in total population would begin to settle in the Savery area. These impacts would be further aggravated when the mine closed and workers migrated from the area, leaving behind an oversupply of housing and community services.

Transportation systems, health facilities, and other services (police and fire protection, etc.) in the Little Snake River Valley area are adequate for the existing population of about 600 persons. However, extensive investment would be required to expand these services to accommodate mine-related population growth.

The Savery project could produce between 4 and 7 million tons of coal per year. This level of production would directly compete with new and existing coal mines in Carbon



Memorandum
September 24, 1982
Page Two

1. Subsidence - however, any potential impacts due to subsidence are dismissed by the statement that "Subsidence is a potential impact with a gradual and long-term effect which cannot be predicted until mining plans are developed" (Page 16). This statement is incorrect.

15-2 2. Placement of surface facilities in the floodplain of Savory Creek (Map 6).

3. Projectad business and residential development in floodplains and adjacent areas (Map 7).

4. Projectad railroad spur to Craig, Colorado or Creston Junctioo, Wyoming (Page 20, Page 42-43).

II. Potential Effects on Alluvial Valley Floors

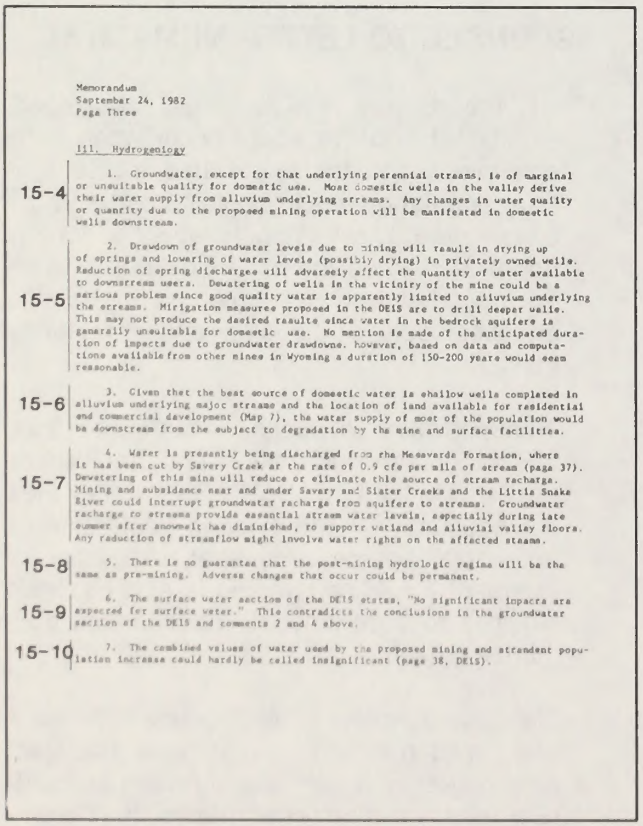
On page 38, the DEIS acknowledges that Savory Creek, Slater Creek and the Little Snake River drainages harbor potential AVF. We concur with this evaluation and suggest that at a minimum all of the Little Snake River drainage above Bagge, Wyoming would be further declared significant to farming since "There are approximately 135 acres of cottonwood-riparian vegetation and 320 acres of cropland per linear mile of alluvial valley floor" (Page 42). However, the DEIS dismisses any consideration of impacts to AVF's by stating that "Impact to alluvial valley floors will be addressed in the mine and reclamation plan environmental document prepared by the Office of Surface Mining" (Page 42).

Thus the discussion of impacts to AVF's is grossly deficient. Additional AVF data problems include:

1. It is highly unlikely that the quaternary alluvium of the Little Snake River does not extend upstream beyond Slater, Colorado (Map 14).

15-3 2. It is highly unlikely that the floodplain is uniformly disturbed along Slater Creek, Savory Creek, Fly Creek, Battle Creek and the Little Snake River (Map 15).

3. The mine facilities area straddles Savery Creek from one side of the valley to the other. This includes a proposed "open coal stockpile" which may pollute the stream itself. Additionally, several other smaller tributary drainages may also be AVF's and may potentially be affected by subsidence and groundwater interruption.



Memorandum
September 24, 1982
Page Three

III. Hydrogeology

15-4 1. Groundwater, except for that underlying perennial streams, is of marginal or unsuitable quality for domestic use. Most domestic wells in the valley derive their water supply from alluvium underlying streams. Any changes in water quality or quantity due to the proposed mining operation will be manifested in domestic wells downstream.

15-5 2. Drawdown of groundwater levels due to mining will result in drying up of springs and lowering of water levels (possibly drying) in privately owned wells. Reduction of spring discharges will adversely affect the quantity of water available to downstream users. Dewatering of wells in the vicinity of the mine could be a serious problem since good quality water is apparently limited to alluvium underlying the streams. Mitigation measures proposed in the DEIS are to drill deeper wells. This may not produce the desired results since water in the bedrock aquifers is generally unsuitable for domestic use. No mention is made of the anticipated duration of impacts due to groundwater drawdowns, however, based on data and computations available from other mines in Wyoming a duration of 150-200 years would seem reasonable.

15-6 3. Given that the best source of domestic water is shallow wells completed in alluvium underlying major streams and the location of land available for residential and commercial development (Map 7), the water supply of most of the population would be downstream from the subject to degradation by the mine and surface facilities.

15-7 4. Water is presently being discharged from the Mesaverde Formation, where it has been cut by Savery Creek at the rate of 0.9 cfs per mile of stream (page 37). Dewatering of this mine will reduce or eliminate this source of stream recharge. Mining and subsidence near and under Savery and Slater Creeks and the Little Snake River could interrupt groundwater recharge from aquifers to streams. Groundwater recharge to streams provide essential stream water levels, especially during late summer after snowmelt has diminished, to support wetland and alluvial valley floors. Any reduction of streamflow might involve water rights on the affected steams.

15-8 5. There is no guarantee that the post-mining hydrologic regime will be the same as pre-mining. Adverse changes that occur could be permanent.

15-9 6. The surface water section of the DEIS states, "No significant impacts are expected for surface water." This contradicts the conclusions in the groundwater section of the DEIS and comments 2 and 4 above.

15-10 7. The combined values of water used by the proposed mining and attendant population increase could hardly be called insignificant (page 38, DEIS).

County. This competition could impede or delay new mine development near communities along I-80 until sometime around the year 2000, thereby compounding the recession in these communities.

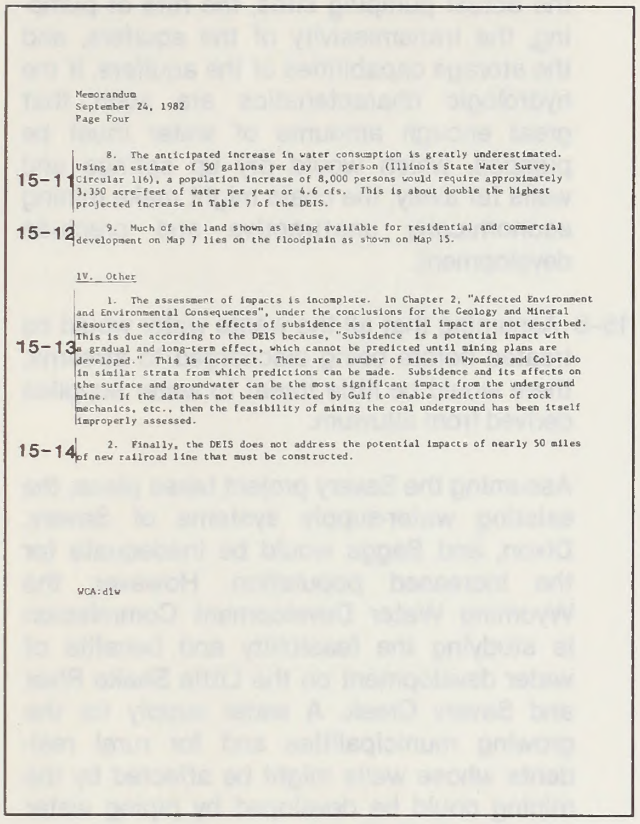
The Savery project would employee between 1,000 and 1,800 persons and would cause an estimated population increase of 4,800 to 8,600 persons. Over time, nearly all of these people would settle in the Savery area. This new settlement would occur on crucial big game winter ranges, threatened and endangered wildlife species habitat, and floodplains.

The Savery area contains some of the highest quality wildlife habitat in south-central Wyoming. This habitat is essential to the survival of numerous wildlife species, ranging from elk and deer to bald eagles and great blue herons. People moving into the area would build their homes and businesses within these habitats. In addition to this effect, increased human activity in the immediate vicinity could cause many animals to attempt to move to other habitats, which might not be available. Human activity during a severe winter could cause a significant mortality rate for elk, deer, and perhaps bald eagles. These wildlife and economic impacts would be significant and could not be mitigated by the applicant.

BLM's desire to lease coal near existing communities that need growth and its concern for threatened and endangered wildlife species and big game crucial winter ranges provide the rationale for selection of the No Development Alternative as the preferred alternative.

15-2 Justification for excluding resources not significantly impacted is contained in the Savery PRLA Site-Specific Environmental Report (SSER). This report is available at the Craig and Rawlins District offices, BLM.

The discussion of subsidence has been supplemented in the final EIS. The impacts of surface facilities and business and residential development on vegetation is contained



Memorandum
September 24, 1982
Page Four

15-11 8. The anticipated increase in water consumption is greatly underestimated. Using an estimate of 50 gallons per day per person (Illinois State Water Survey, Circular 116), a population increase of 8,000 persons would require approximately 3,350 acre-feet of water per year or 4.6 cfs. This is about double the highest projected increase in Table 7 of the DEIS.

15-12 9. Much of the land shown as being available for residential and commercial development on Map 7 lies on the floodplain as shown on Map 15.

IV. Other

15-13 1. The assessment of impacts is incomplete. In Chapter 2, "Affected Environment and Environmental Consequences", under the conclusions for the Geology and Mineral Resources section, the effects of subsidence as a potential impact are not described. This is due according to the DEIS because, "Subsidence is a potential impact with a gradual and long-term effect, which cannot be predicted until mining plans are developed." This is incorrect. There are a number of mines in Wyoming and Colorado in similar strata from which predictions can be made. Subsidence and its affects on the surface and groundwater can be the most significant impact from the underground mine. If the data has not been collected by Gulf to enable predictions of rock mechanics, etc., then the feasibility of mining the coal underground has been itself improperly assessed.

15-14 2. Finally, the DEIS does not address the potential impacts of nearly 50 miles of new railroad line that must be constructed.

WCA:dlw

in the Savery PRLA SSER and were not considered signficiant in a regional context.

See response 15-4 for clarification of the transportation impacts.

15-3 (Item 1) The map has been modified to show alluvium extending farther upstream.

(Item 2) Agreed. This map has been deleted and the discussion of floodplains and alluvial valley floors has been expanded in the final EIS.

(Item 3) The present mine plan indicates surface facilities will be located on uplands and not in the valley floor. Wyoming Department of Environmental Quality regulations require diking of coal stockpiles to prevent washoff from entering nearby streams. The regulations also prevent coal stockpiles from being located on floodplains. The final EIS has been revised to explain these items.

Small areas of potential alluvial valley floors might be affected by subsidence, and some changes in groundwater flow patterns might occur that could dewater some areas that are now subirrigated. However, the areas affected would be relatively small, and environmental effects to the essential hydrologic functions of the potential alluvial valley floors of Savery Creek and the Little Snake River would be expected to be minimal. The sections concerning floodplains and alluvial valley floors have been revised and expanded in the final EIS.

15-4 The net groundwater gradient would probably be toward the mine. If waste water were treated to Wyoming standards and discharged to the streams, water in domestic wells should be relatively unaffected. Possible recharge by treated water (considerably diluted by surface water) would be the only source of affected water and it would probably have a negligible effect on water quality.

15-5 The effect of the drawdown as a result of mining on privately owned wells or springs is very speculative in the absence of data on

the actual pumping sites, the rate of pumping, the transmissivity of the aquifers, and the storage capabilities of the aquifers. If the hydrologic characteristics are such that great enough amounts of water must be pumped, which would dry up springs and wells far away, the costs might make mining economically unattractive and preclude development.

15-6 Assuming that all the waste water would be treated before being discharged to streams, there would be little threat to water supplies derived from alluvium.

Assuming the Savery project takes place, the existing water-supply systems of Savery, Dixon, and Baggs would be inadequate for the increased population. However, the Wyoming Water Development Commission is studying the feasibility and benefits of water development on the Little Snake River and Savery Creek. A water supply for the growing municipalities and for rural residents whose wells might be affected by the mining could be developed by piping water downstream from one of the proposed reservoir sites.

15-7 Any depletion of groundwater discharge to Savery Creek would be approximately balanced by mine discharge (presumably to Savery Creek). There should be little net change. The time of discharge to the streams might be altered. The places where discharge to the streams occurred also might change.

15-8 It is true, there are no guarantees that post-mine hydrology will be the same as premining hydrology. Adverse changes could be permanent, but so could favorable ones.

15-9 If groundwater from the mines were discharged to the streams and if the groundwater was of poor quality, then the impact on the receiving streams would be serious. Additional data certainly are needed to determine the quality of water that will be discharged before mine plans are approved by the regulatory agencies. However, based

on the data available and on regulations and procedures governing mine plans, no significant impacts are expected for surface water.

15-10 The Surface-Water section of the final EIS has been revised from the draft EIS. The amount of water that would be consumed annually by the proposed mining and the attendant population increase would be very small in comparison to existing uses and to runoff of the Little Snake River and Savery Creek. There is a problem in the area—most of the runoff occurs in just a few months during spring and early summer (Figure 1). During late summer and fall, when streamflows are small, shortages of water do occur. Water is available for existing and new uses, but reservoir storage is needed to provide an adequate supply throughout the year.

15-11 Your calculations are in error.

50 gallons per day x 8,000 persons x 365 days per year
= 146,000,000 gallons per year
= 448 acre-feet per year
= 0.62 cubic foot per second

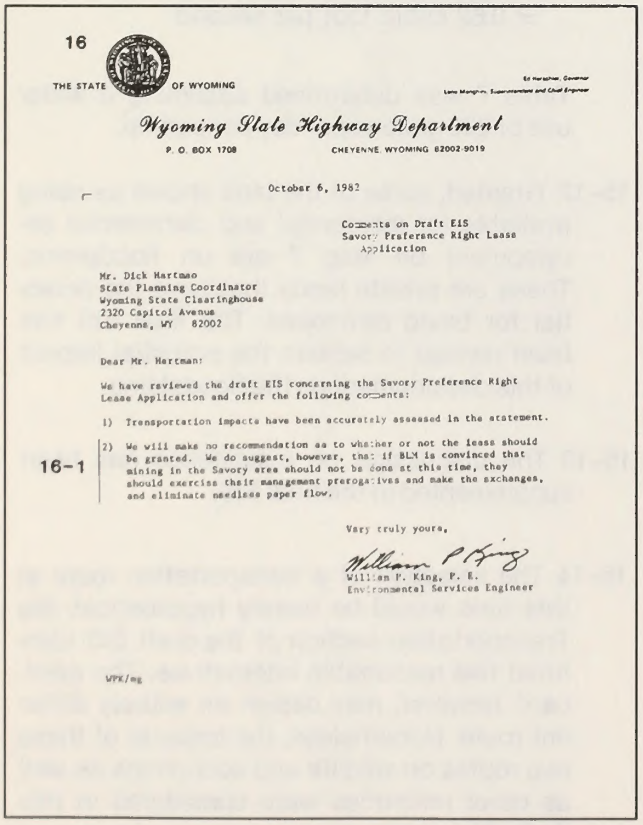
Table 7 was determined assuming a water use of 200 gallons per day per person.

15-12 Granted, some of the land shown as being available for residential and commercial development on Map 7 are on floodplains. These are private lands that have the potential for being developed. The final EIS has been revised to explain the potential impact of this development on the floodplains.

15-13 The discussion on subsidence has been supplemented in the final EIS.

15-14 The selection of a transportation route at this time would be merely hypothetical; the Transportation section of the draft EIS identified two reasonable alternatives. The applicant, however, may design an entirely different route. Nonetheless, the impacts of these two routes on wildlife and economics as well as other resources were considered in this analysis.

If it were determined that the applicant were entitled to a coal lease and negotiations for an exchange failed, a transportation route would be selected by the applicant. The applicant would then request a right-of-way from BLM. BLM would conduct an environmental analysis of the impacts of the specific transportation system, which would, in turn, be used to determine whether or not to grant the right-of-way application.



16

THE STATE OF WYOMING

Ed Herschler, Governor
Lynn Meagher, Superintendent and Chief Engineer

Wyoming State Highway Department

P. O. BOX 1708 CHEYENNE, WYOMING 82002-9019

October 6, 1982

Comments on Draft EIS
Savory Preference Right Lease
Application

Mr. Dick Hartman
State Planning Coordinator
Wyoming State Clearinghouse
2320 Capitol Avenue
Cheyenne, WY 82002

Dear Mr. Hartman:

We have reviewed the draft EIS concerning the Savory Preference Right Lease Application and offer the following comments:

1) Transportation impacts have been accurately assessed in the statement.

16-1 2) We will make no recommendation as to whether or not the lease should be granted. We do suggest, however, that if BLM is convinced that mining in the Savory area should not be done at this time, they should exercise their management prerogatives and make the exchanges, and eliminate needless paper flow.

Very truly yours,

William P. King

William P. King, P. E.
Environmental Services Engineer

WPK/mg

RESPONSE TO LETTER NUMBER 16

16-1 See the discussion of the Secretary of the Interior's management options in the Introduction section and Chapter 1 of the final EIS.

17

THE STATE OF WYOMING

ED HERSCHLER
GOVERNOR

Water Development Commission

BARRETT BUILDING TELEPHONE: 307-777-7626 CHEYENNE, WYOMING 82002

Michael H. Reese
Administrator

October 21, 1982

Nelson E. Wren, Jr.
Chairman
Walter J. Pilch
Vice Chairman
Lewis Freudenthal
Secretary
Lee Coffman
Kenneth Kennedy
William J. Kirven, Jr.
J.W. Wes Myers
James Noble
Willard C. Rhoads

TO: Mike Reese, Administrator

FROM: David Zelenka, Water Resources Engineer

RE: Savery Coal/EIS

After reading the draft EIS prepared by the BLM Office in Rawlins, Wyoming, I would make a few observations. The report addresses potential impacts on existing stream flows, wildlife and water quality. These issues would best be examined by the State Engineer's Office, Game and Fish Commission and Department of Environmental Quality, respectively.

In response to any potential impacts on water supply or proposed water development projects, I would respond as follows:

1) On page 9 under the heading of "Relationship with other development in the area", it is cited that a possible conflict with one or several water development alternatives under consideration by the State of Wyoming in the Little Snake River Water Management Project.

   I can see no conflict between the proposed coal mining and any of the alternatives considered for water development, past or present. All reservoir sites, except the "Sandstone" and Pothook sites, lie outside the affected areas. The two reservoir sites within the designated area lie on the edges of the area and the majority of the reservoir pool would lie outside the area in both instances. In addition, these two sites are the least preferred and least likely to be developed of any alternatives.

   All proposed transbasin collector facilities lie outside this designated area and no conflict should exist.

2) Any water needs for municipal, domestic or industrial supplies arising from the proposed coal development could readily be provided by the Little Snake River Water Management Project once those needs are identified.

Likewise any additional water needed to mitigate losses to existing agricultural water supplies or water quality could be purchased by the developer from the water developed by the Little Snake River Project.

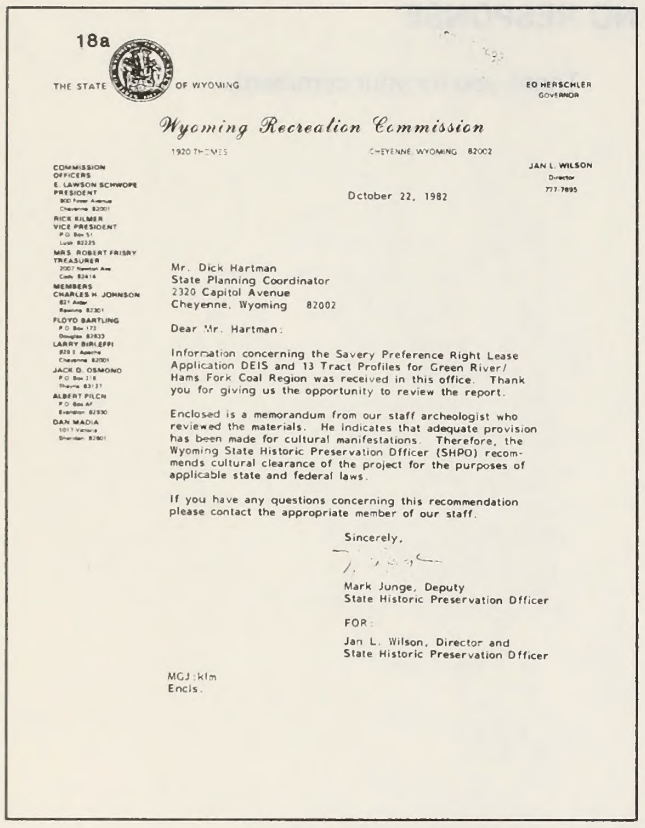
In conclusion, any inconveniences upon potential water development projects in the Little Snake River drainage can be minimized or eliminated by forwarding plans and projected water demands relating to coal mining promptly to the Wyoming Water Development Commission.

OZ:ew

NO RESPONSE

Thank you for your comment.

18a



THE STATE OF WYOMING

EO HERSCHLER
GOVERNOR

Wyoming Recreation Commission

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JAN L. WILSON
Director
777-7695

October 22, 1982

Mr. Dick Hartman
State Planning Coordinator
2320 Capitol Avenue
Cheyenne, Wyoming 82002

Dear Mr. Hartman:

Information concerning the Savery Preference Right Lease Application DEIS and 13 Tract Profiles for Green River/ Hams Fork Coal Region was received in this office. Thank you for giving us the opportunity to review the report.

Enclosed is a memorandum from our staff archeologist who reviewed the materials. He indicates that adequate provision has been made for cultural manifestations. Therefore, the Wyoming State Historic Preservation Officer (SHPO) recommends cultural clearance of the project for the purposes of applicable state and federal laws.

If you have any questions concerning this recommendation please contact the appropriate member of our staff.

Sincerely,

Mark Junge, Deputy
State Historic Preservation Officer

FOR:

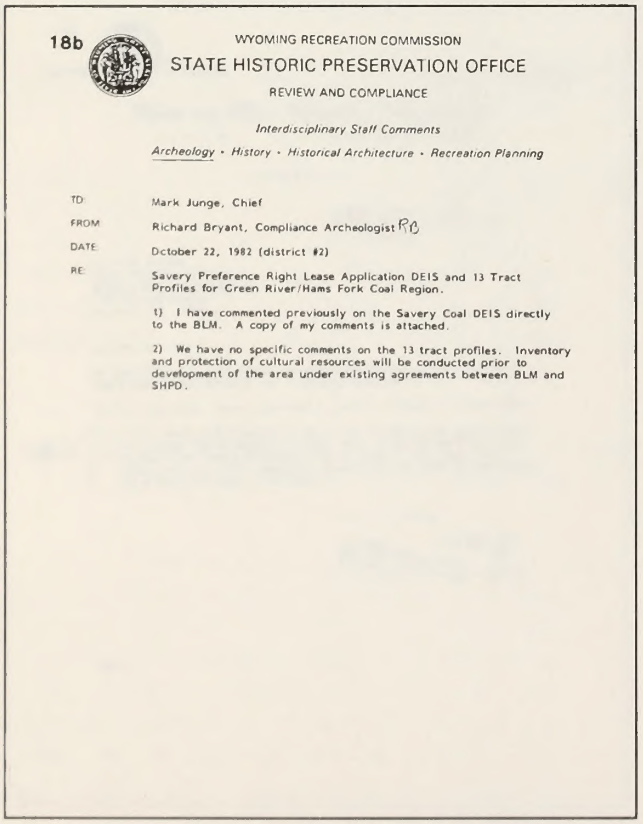
Jan L. Wilson, Director and
State Historic Preservation Officer

MGJ:klm
Encls.

NO RESPONSE

Thank you for your comment.

18b



WYOMING RECREATION COMMISSION

STATE HISTORIC PRESERVATION OFFICE

REVIEW AND COMPLIANCE

Interdisciplinary Staff Comments

Archeology • History • Historical Architecture • Recreation Planning

TO: Mark Junge, Chief

FROM: Richard Bryant, Compliance Archeologist RB

DATE: October 22, 1982 (district #2)

RE: Savery Preference Right Lease Application DEIS and 13 Tract Profiles for Green River/Hams Fork Coal Region.

1) I have commented previously on the Savery Coal DEIS directly to the BLM. A copy of my comments is attached.

2) We have no specific comments on the 13 tract profiles. Inventory and protection of cultural resources will be conducted prior to development of the area under existing agreements between BLM and SHPO.

NO RESPONSE

Thank you for your comment.

18c

September 23, 1982

Gene Kolkman
Savery Coal EIS Team Leader
Bureau of Land Management
P.O. Box 670
Rawlins, Wyoming 82301

Dear Mr. Kolkman,

An issue not addressed in the Draft EIS and one which would further support the no development alternative is the impact the proposed mining development would have on cultural resource sites.

Few prehistoric sites are known to exist in the area but this is because very few surveys have been conducted and sites are difficult to locate in the dense vegetation and ground cover. The area is considered to have a high potential for prehistoric sites because of its suitability for hunting and collecting roots, berries and other food resources. The river valleys would also serve as a natural transportation route through the area.

Development of the mine would likely impact archeological and historic sites directly, and indirect effects from new roads, housing and community facilities and increased population would also occur. We support the No Development Alternative.

Sincerely,

Richard Bryant
Compliance Archeologist

RLB:klm

bcc: JLWilson; MGJunge; RLBryant/RF

NO RESPONSE

Thank you for your comment.

19a

THE STATE OF WYOMING

ED HERSCHLER
GOVERNOR

Wyoming Department of Agriculture

TELEPHONE: (307) 777-7321 CHEYENNE, WYOMING 82002

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COLLEGE OF AGRICULTURE
UNIVERSITY OF WYOMING, LARAMIE

DATE: October 13, 1982

TO: Don Daiss, Assistant Commissioner

FROM: Collin Fallat, Director CF
Agriculture Planning and Development

SUBJECT: DRAFT SAVERY CDAL ENVIRONMENTAL IMPACT STATEMENT

The purpose of this memorandum is to respond to the Draft Savery Coal EIS.

19a-1 The Agriculture Planning and Development Division has reviewed the draft EIS and has the following concern. We do not believe the draft EIS adequately assesses the current agricultural structure within the study area, nor assess the impact on agriculture from the proposed project. Agriculture is the dominent economic base in the Baggs-Savery area and will be affected by the introduction of a large mining operation. The Division would like to see a thorough analysis of the effect of the proposed course of action on the agriculture industry of southern Carbon County.

Thank you for this opportunity to respond.

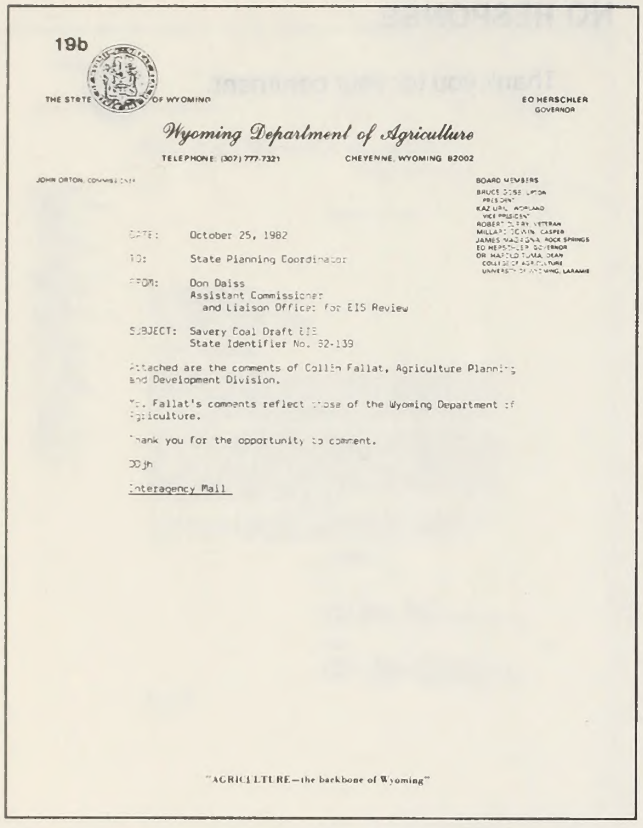
CF/lms

"AGRICULTURE—the backbone of Wyoming"

RESPONSE TO LETTER NUMBER 19

19a-1 The Economic section has been expanded to include the impacts on agriculture in southern Carbon County.

19b



THE STATE OF WYOMING

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Wyoming Department of Agriculture

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COLLEGE OF AGRICULTURE
UNIVERSITY OF WYOMING, LARAMIE

DATE: October 25, 1982

TO: State Planning Coordinator

FROM: Don Daiss
Assistant Commissioner
and Liaison Officer for EIS Review

SUBJECT: Savery Coal Draft EIS
State Identifier No. 82-139

Attached are the comments of Collin Fallat, Agriculture Planning and Development Division.

Mr. Fallat's comments reflect those of the Wyoming Department of Agriculture.

Thank you for the opportunity to comment.

DDjh

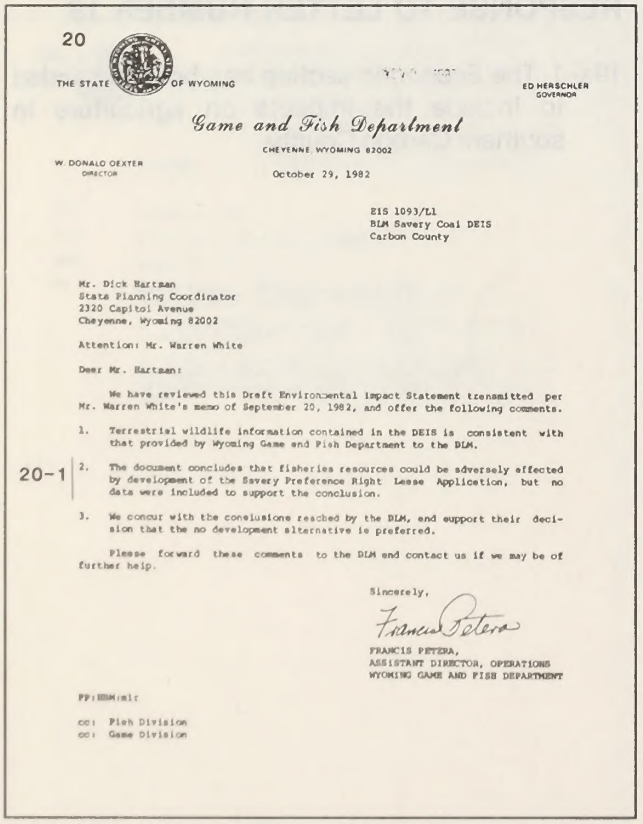
Interagency Mail

"AGRICULTURE—the backbone of Wyoming"

NO RESPONSE

Thank you for your comment.

20



THE STATE OF WYOMING

ED HERSCHLER
GOVERNOR

Game and Fish Department

CHEYENNE, WYOMING 82002

W. DONALD OEXTER
DIRECTOR

October 29, 1982

EIS 1093/L1
BLM Savery Coal DEIS
Carbon County

Mr. Dick Hartman
State Planning Coordinator
2320 Capitol Avenue
Cheyenne, Wyoming 82002

Attention: Mr. Warren White

Dear Mr. Hartman:

We have reviewed this Draft Environmental Impact Statement transmitted per Mr. Warren White's memo of September 20, 1982, and offer the following comments.

1. Terrestrial wildlife information contained in the DEIS is consistent with that provided by Wyoming Game and Fish Department to the BLM.

20-1 2. The document concludes that fisheries resources could be adversely effected by development of the Savery Preference Right Lease Application, but no data were included to support the conclusion.

3. We concur with the conclusions reached by the BLM, and support their decision that the no development alternative is preferred.

Please forward these comments to the BLM and contact us if we may be of further help.

Sincerely,

Francis Petera

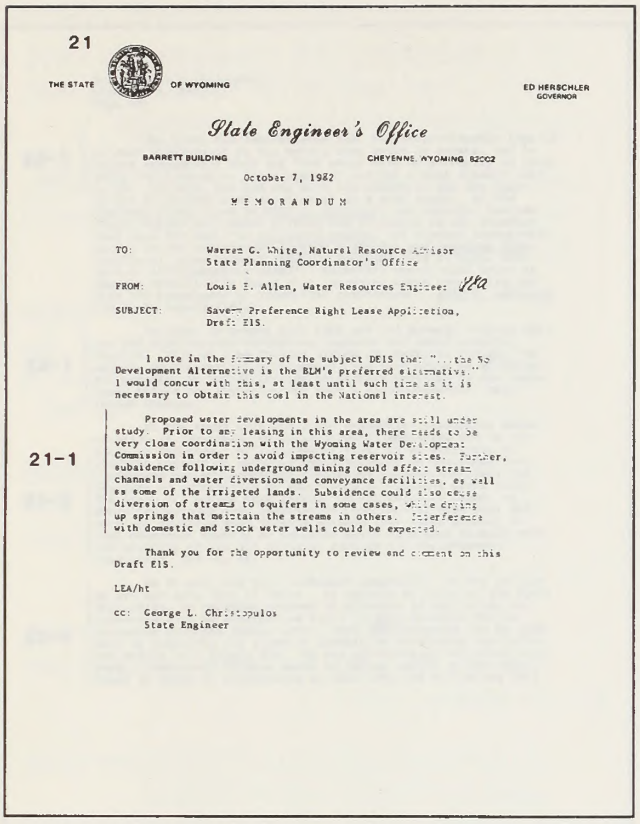
FRANCIS PETERA,
ASSISTANT DIRECTOR, OPERATIONS
WYOMING GAME AND FISH DEPARTMENT

FP:HBH:mlr

cc: Fish Division
cc: Game Division

RESPONSE TO LETTER NUMBER 20

20-1 A Fisheries section has been added to the final EIS.



21

THE STATE OF WYOMING

ED HERSCHLER
GOVERNOR

State Engineer's Office

BARRETT BUILDING CHEYENNE, WYOMING 82002

October 7, 1982

MEMORANDUM

TO: Warren G. White, Natural Resource Advisor
State Planning Coordinator's Office

FROM: Louis E. Allen, Water Resources Engineer

SUBJECT: Savery Preference Right Lease Application,
Draft EIS.

I note in the Summary of the subject DEIS that "...the No Development Alternative is the BLM's preferred alternative." I would concur with this, at least until such time as it is necessary to obtain this coal in the National interest.

21-1 Proposed water developments in the area are still under study. Prior to any leasing in this area, there needs to be very close coordination with the Wyoming Water Development Commission in order to avoid impacting reservoir sites. Further, subsidence following underground mining could affect stream channels and water diversion and conveyance facilities, as well as some of the irrigated lands. Subsidence could also cause diversion of streams to aquifers in some cases, while drying up springs that maintain the streams in others. Interference with domestic and stock water wells could be expected.

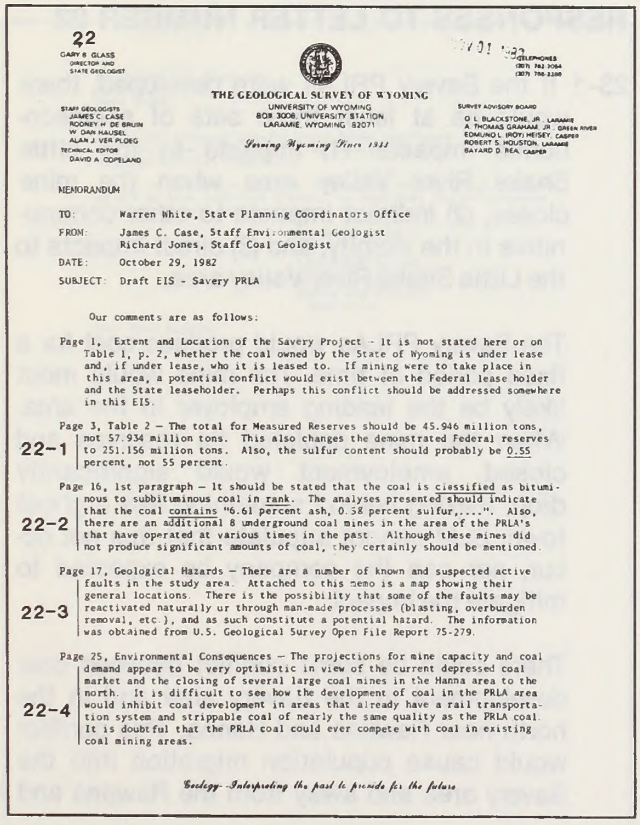
Thank you for the opportunity to review and comment on this Draft EIS.

LEA/ht

cc: George L. Christopoulos
State Engineer

RESPONSE TO LETTER 21

21-1 The Wyoming Water Development Commission staff has reviewed the draft EIS. Their letter (number 17) indicated no conflicts existed as a result of the Savery coal proposal on potential reservoir sites. In the final EIS, we have supplied some additional information on empirical subsidence predictions. Although we agree with the potential impacts you have identified, the precise magnitude and location of these impacts cannot be identified until a mine and reclamation plan is developed. Appropriate mitigation could then be considered as a condition of mine plan approval.



22

GARY B. GLASS
DIRECTOR AND
STATE GEOLOGIST

THE GEOLOGICAL SURVEY OF WYOMING
UNIVERSITY OF WYOMING
BOX 3008, UNIVERSITY STATION
LARAMIE, WYOMING 82071

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MEMORANDUM

TO: Warren White, State Planning Coordinators Office

FROM: James C. Case, Staff Environmental Geologist
Richard Jones, Staff Coal Geologist

DATE: October 29, 1982

SUBJECT: Draft EIS - Savery PRLA

Our comments are as follows:

Page 1, Extent and Location of the Savery Project - It is not stated here or on Table 1, p. 2, whether the coal owned by the State of Wyoming is under lease and, if under lease, who it is leased to. If mining were to take place in this area, a potential conflict would exist between the Federal lease holder and the State leaseholder. Perhaps this conflict should be addressed somewhere in this EIS.

22-1 Page 3, Table 2 - The total for Measured Reserves should be 45.946 million tons, not 57.934 million tons. This also changes the demonstrated Federal reserves to 251.156 million tons. Also, the sulfur content should probably be 0.55 percent, not 55 percent.

22-2 Page 16, 1st paragraph - It should be stated that the coal is classified as bituminous to subbituminous coal in rank. The analyses presented should indicate that the coal contains "6.61 percent ash, 0.58 percent sulfur,....". Also, there are an additional 8 underground coal mines in the area of the PRLA's that have operated at various times in the past. Although these mines did not produce significant amounts of coal, they certainly should be mentioned.

22-3 Page 17, Geological Hazards - There are a number of known and suspected active faults in the study area. Attached to this memo is a map showing their general locations. There is the possibility that some of the faults may be reactivated naturally or through man-made processes (blasting, overburden removal, etc.), and as such constitute a potential hazard. The information was obtained from U.S. Geological Survey Open File Report 75-279.

22-4 Page 25, Environmental Consequences - The projections for mine capacity and coal demand appear to be very optimistic in view of the current depressed coal market and the closing of several large coal mines in the Hanna area to the north. It is difficult to see how the development of coal in the PRLA area would inhibit coal development in areas that already have a rail transportation system and strippable coal of nearly the same quality as the PRLA coal. It is doubtful that the PRLA coal could ever compete with coal in existing coal mining areas.

Geology - Interpreting the past to provide for the future

RESPONSES TO LETTER NUMBER 22

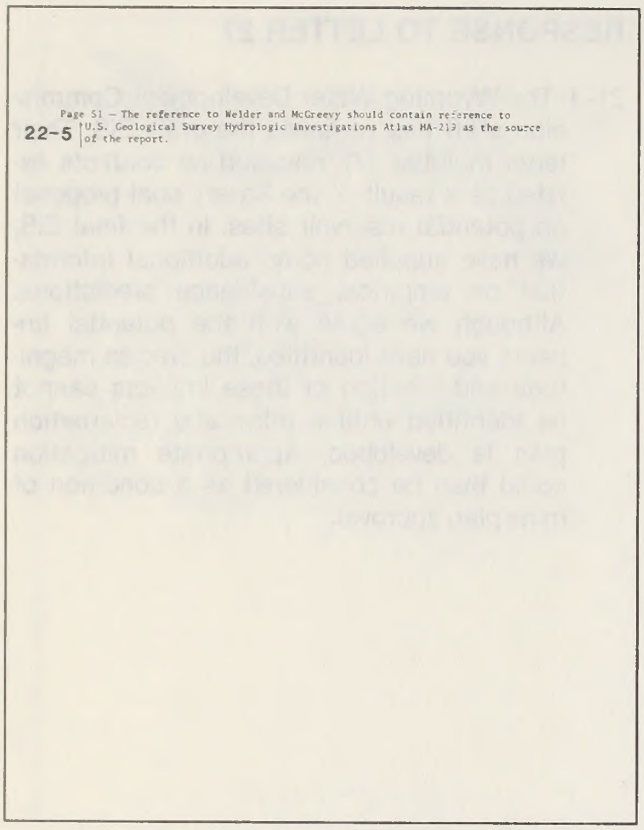
22-1 Table 2 has been revised.

22-2 The text of the final EIS has been revised to reflect your comment, thank you.

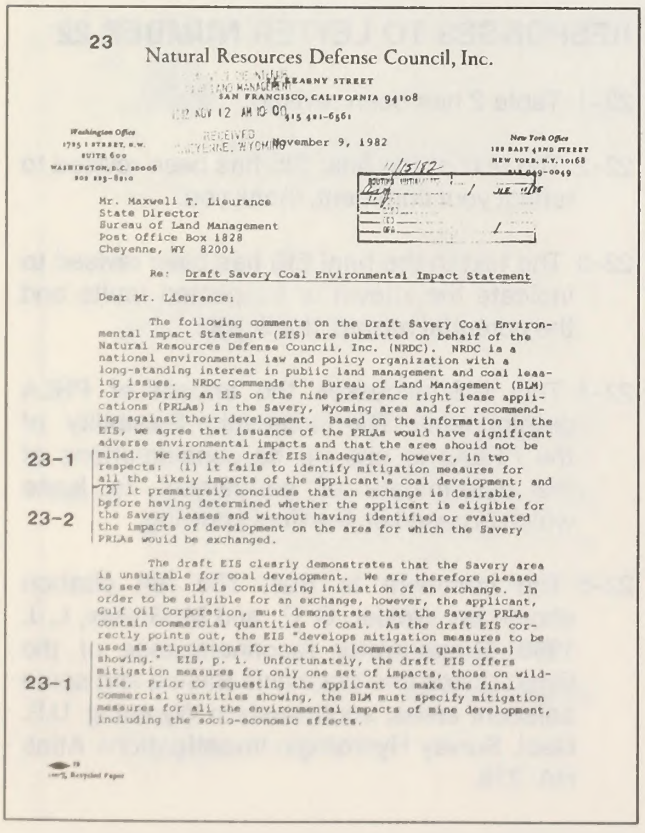
22-3 The text in the final EIS has been revised to indicate the known or suspected faults and the potential hazard, thank you.

22-4 This EIS accesses the impact of PRLA development. The economic feasibility of the PRLAs is one of the considerations of the determinate of entitlement to lease which is based on the final showing.

22-5 The comment is true. The full citation should be: Welder, G. E., and McGreevy, L. J. 1966. Groundwater reconnaissance of the Great Divide and Washakie Basins and some adjacent areas, southwestern Wyoming. U.S. Geol. Survey Hydrologic Investigations Atlas HA-219.



Page 51 – The reference to Welder and McGreevy should contain reference to
22-5 U.S. Geological Survey Hydrologic Investigations Atlas HA-213 as the source of the report.



23

Natural Resources Defense Council, Inc.

[illegible] KEARNY STREET
SAN FRANCISCO, CALIFORNIA 94108
[illegible] NOV 12 AM 10 00 415 421-6561

Washington Office
1725 I STREET, N.W.
SUITE 600
WASHINGTON, D.C. 20006
202 223-8210

RECEIVED
CHEYENNE, WYOMING

November 9, 1982

New York Office
122 EAST 42ND STREET
NEW YORK, N.Y. 10168
212 949-0049

11/15/82
SOUTH'S INITIALS
JLE

Mr. Maxwell T. Lieurance
State Director
Bureau of Land Management
Post Office Box 1828
Cheyenne, WY 82001

Re: Draft Savery Coal Environmental Impact Statement

Dear Mr. Lieurance:

The following comments on the Draft Savery Coal Environmental Impact Statement (EIS) are submitted on behalf of the Natural Resources Defense Council, Inc. (NRDC). NRDC is a national environmental law and policy organization with a long-standing interest in public land management and coal leasing issues. NRDC commends the Bureau of Land Management (BLM) for preparing an EIS on the nine preference right lease applications (PRLAs) in the Savery, Wyoming area and for recommending against their development. Based on the information in the EIS, we agree that issuance of the PRLAs would have significant adverse environmental impacts and that the area should not be
23-1 mined. We find the draft EIS inadequate, however, in two respects: (1) it fails to identify mitigation measures for all the likely impacts of the applicant's coal development; and
23-2 (2) it prematurely concludes that an exchange is desirable, before having determined whether the applicant is eligible for the Savery leases and without having identified or evaluated the impacts of development on the area for which the Savery PRLAs would be exchanged.

The draft EIS clearly demonstrates that the Savery area is unsuitable for coal development. We are therefore pleased to see that BLM is considering initiation of an exchange. In order to be eligible for an exchange, however, the applicant, Gulf Oil Corporation, must demonstrate that the Savery PRLAs contain commercial quantities of coal. As the draft EIS correctly points out, the EIS "develops mitigation measures to be used as stipulations for the final [commercial quantities] showing." EIS, p. 1. Unfortunately, the draft EIS offers
23-1 mitigation measures for only one set of impacts, those on wildlife. Prior to requesting the applicant to make the final commercial quantities showing, the BLM must specify mitigation measures for all the environmental impacts of mine development, including the socio-economic effects.

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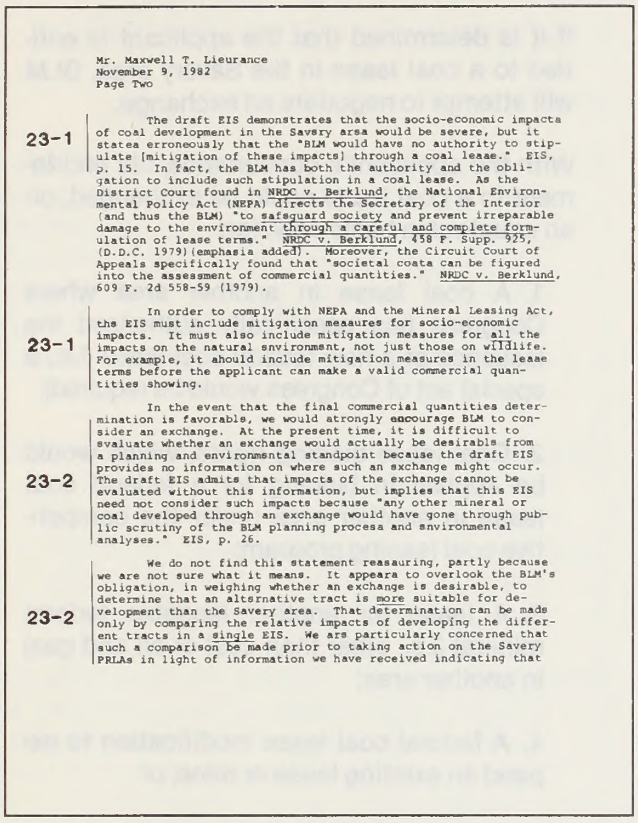
RESPONSES TO LETTER NUMBER 23

23-1 If the Savery PRLAs were developed, there would be at least three sets of socioeconomic impacts: (1) impacts to the Little Snake River Valley area when the mine closes, (2) indirect impacts to other communities in the vicinity, and (3) direct impacts to the Little Snake River Valley area.

The Savery PRLAs would produce coal for a fixed period of time. The mine would most likely be the leading employer in the area. When the mine depleted its reserves and closed, employment would significantly drop, leaving behind something like a ghost town. BLM cannot stipulate that this not occur, nor can the company be expected to mitigate the impact.

There could be some conflict between coal development in the Savery area and in the north near Rawlins and Hanna. This conflict would cause population migration into the Savery area and away from the Rawlins and



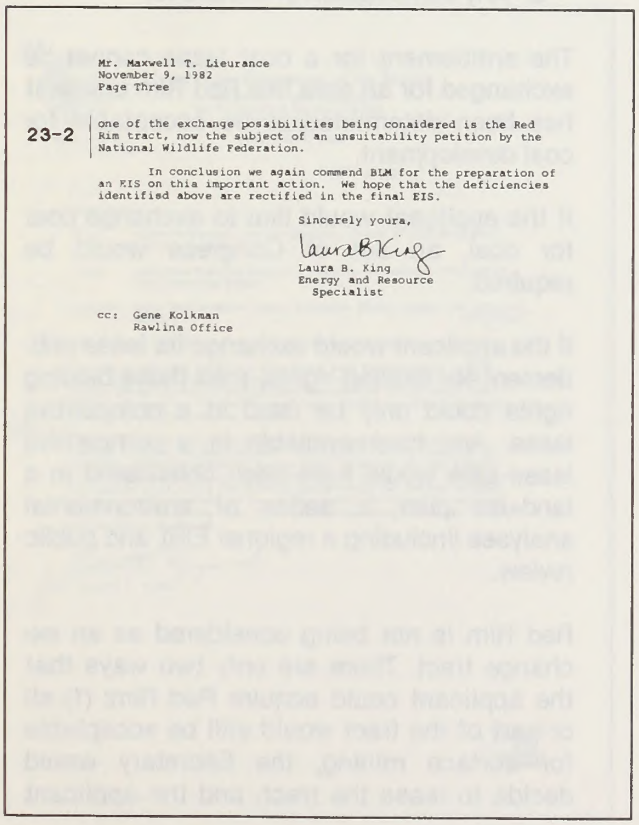
Mr. Maxwell T. Lieurance
November 9, 1982
Page Two

23-1 The draft EIS demonstrates that the socio-economic impacts of coal development in the Savsry arsa would be severe, but it statea erroneously that the "BLM would havs no authority to stipulate [mitigation of these impacts] through a coal leaae." EIS, p. 15. In fact, the BLM has both the authority and the obligation to include such stipulation in a coal lease. As the District Court found in NRDC v. Berklund, the National Environmental Policy Act (NEPA) directs the Secretary of the Interior (and thus the BLM) "to safsguard society and prevent irreparable damage to the environment through a careful and complete formulation of lease terms." NRDC v. Berklund, 458 F. Supp. 925, (D.D.C. 1979)(emphasis added). Moreover, the Circuit Court of Appeals specifically found that "societal coats can be figured into the assessment of commercial quantities." NRDC v. Berklund, 609 F. 2d 558-59 (1979).

23-1 In order to comply with NEPA and the Mineral Leasing Act, ths EIS must include mitigation meaaures for socio-economic impacts. It must also include mitigation measures for all the impacts on the natural snvironmsnt, not just those on wildlife. For exampls, it ahould include mitigation measures in the leaae terms before the applicant can make a valid commercial quantities showing.

23-2 In the event that the final commercial quantities determination is favorablo, we would atrongly encourage BLM to consider an exchange. At the present time, it is difficult to svaluate whether an exchange would actually be desirabls from a planning and environmsntal standpoint because the draft EIS provides no information on where such an sxchange might occur. The draft EIS admits that impacts of the exchange cannot be evaluated without this information, but implies that this EIS need not consider such impacts becauae "any other mineral or coal developed through an exchange would have gone through public scrutiny of the BLM planning procesa and snvironmental analyses." EIS, p. 26.

23-2 We do not find this statement reasauring, partly because we are not sure what it means. It appeara to overlook the BLM's obligation, in weighing whether an exchange is desirable, to determine that an alternative tract is more suitable for development than the Savery area. That determination can be made only by comparing the relative impacts of developing the different tracts in a single EIS. We ars particularly concerned that such a comparison be made prior to taking action on the Savery PRLAs in light of information we have received indicating that



Mr. Maxwell T. Lieurance
November 9, 1982
Page Three

23-2 one of the exchange possibilities being conaidered is the Red Rim tract, now the subject of an unsuitability petition by the National Wildlife Federation.

In conclusion we again commend BLM for the preparation of an EIS on thia important action. We hope that the deficiencies identifisd above are rectified in the final EIS.

Sincerely youra,

Laura B. King
Energy and Resource
Specialist

cc: Gene Kolkman
Rawlins Office

Hanna area. This in-migration could extend the recession in Rawlins and Hanna until demand for coal increased significantly.

BLM cannot stipulate these impacts nor can the company be held responsible for the recession in Rawlins and Hanna.

The set of socioeconomic impacts that can be mitigated are the direct impacts on the Savery area. These impacts result from 4,800 to 8,600 persons migrating into the Savery area, requiring services to be significantly increased. The applicant can undoubtedly assist with mitigating these impacts and BLM can and has identified socioeconomic mitigation measures and has developed specific lease stipulations.

The state of Wyoming has an Industrial Siting Act. Under this act, the Industrial Siting Administration requires industry to mitigate socioeconomic impacts both before it commences construction or production and during its operation. The Industrial Siting Administration has proved to be efficient in identifying and requiring appropriate socioeconomic mitigation measures. One of the many advantages the Industrial Siting Administration has during its permitting process is a specific plan for construction and operation including time frames. BLM, on the other hand, has only general information from the initial showing which allows for the identification of more general socioeconomic impacts.

Mitigation measures have been developed for socioeconomic, geology, and hydrology.

23-2 The purpose of this EIS is not to demonstrate whether or not the PRLAs should be exchanged. The purpose is to develop mitigation measures to be used by the applicant in preparation of the final showing. No decision can be made regarding an exchange until it is determined whether the applicant is entitled to a coal lease.

If it is determined that the applicant is entitled to a coal lease in the Savery area, BLM will attempt to negotiate an exchange.

With the applicant's concurrence, his entitlement to a coal lease could be exchanged, on an equal-value basis only, for:

1. A coal lease in another area where Congress has specifically authorized the issuance of a new federal coal lease (i.e., a special act of Congress would be required);

2. Coal lease bidding rights, which would be applied in bidding for a federal coal lease in another area under the competitive coal leasing program;

3. A lease for another leasable federal mineral (i.e., other than coal or oil and gas) in another area;

4. A federal coal lease modification to expand an existing lease or mine; or

5. Any combination of the above.

The entitlement for a coal lease cannot be exchanged for an area like Red Rim unless it has been determined to be acceptable for coal development.

If the applicant would like to exchange coal for coal, an act of Congress would be required.

If the applicant would exchange its lease entitlement for bidding rights, then those bidding rights could only be used in a competitive lease. Any tract available in a competitive lease sale would have been considered in a land-use plan, a series of environmental analyses (including a regional EIS), and public review.

Red Rim is not being considered as an exchange tract. There are only two ways that the applicant could acquire Red Rim: (1) all or part of the tract would still be acceptable for surface mining, the Secretary would decide to lease the tract, and the applicant

successfully outbid other companies for the right to mine the coal; or (2) the unsuitability petition would be resolved in favor of leasing and developing Red Rim, the applicant requested and received a special act of Congress and exchanged the coal in the Savery PRLAs for the coal on Red Rim. Both of these scenarios assume that the applicant would be interested in acquiring Red Rim; however, we have no indication that this is the case.

24

United States Department of the Interior
NATIONAL PARK SERVICE
ROCKY MOUNTAIN REGIONAL OFFICE
655 Parfet Street
P.O. Box 25287
Denver, Colorado 80225

IN REPLY REFER TO:
L7619 (RMR-PC)

NOV 9 1982

Memorandum

To: District Manager, Rawlins District, Bureau of Land Management, Rawlins, Wyoming

From: Associate Regional Director, Planning and Resource Preservation, Rocky Mountain Region

Subject: Draft Environmental Impact Statement (DEIS), Savery Coal Project, Wyoming (DES 82/54)

The National Park Service has reviewed the subject document.

On page 37 the DEIS points out that should coal mining proceed in this area, groundwater would be contaminated and would need to be treated before being returned to surface water sources such as the Little Snake River. The treated water would be of lower quality, as might groundwater eventually reaching surface sources.

24-1

The Little Snake River is a tributary of the Yampa River which flows through Dinosaur National Monument. The final EIS should point out the possible cumulative effect of lowered water quality in the Little Snake River also lowering the quality of water in the Yampa River. Such lowering of quality could affect the river ecosystem within the national monument to some degree, particularly when combined with the effects of increased water use of the Little Snake under the Cheyenne water development plan as mentioned on page 38.

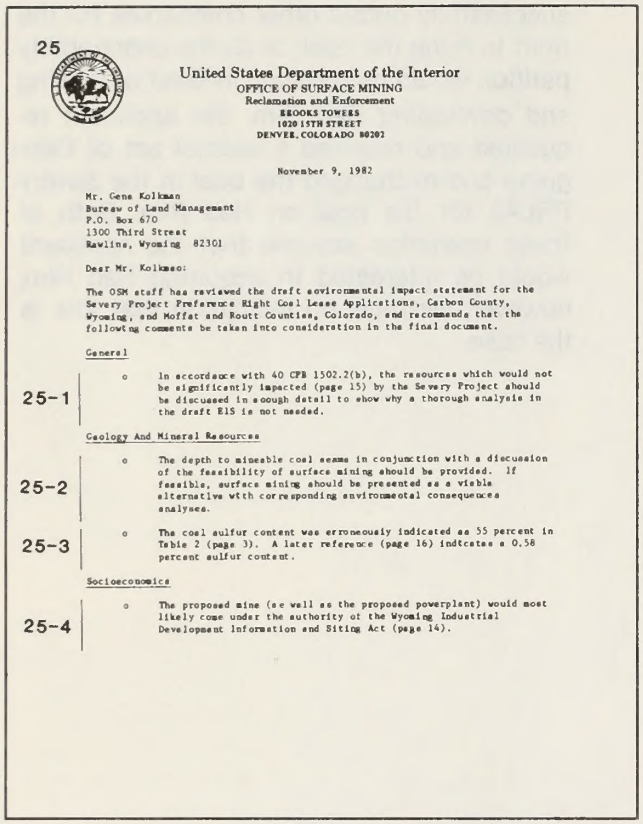
for Robert B. Kaysen
Richard A. Strait

Year of the Visitor

RESPONSE TO LETTER NUMBER 24

24-1 Groundwater that is used for some purposes on the mining site such as dust control would be totally consumed. Other onsite uses might lower the quality of the water, making it necessary to treat the groundwater before discharging it. The treated water would probably be inferior in quality to that of receiving streams. This could lower water quality in the Little Snake and Yampa rivers.

However, water-supply needs of the Savery project could motivate construction of one or more reservoirs on Savery Creek and the Little Snake River. The storage of water during periods of high flow and subsequent release during periods of low flow could result in an improvement of downstream water quality during much of the year.



25

United States Department of the Interior
OFFICE OF SURFACE MINING
Reclamation and Enforcement
BROOKS TOWERS
1020 15TH STREET
DENVER, COLORADO 80202

November 9, 1982

Mr. Gene Kolkman
Bureau of Land Management
P.O. Box 670
1300 Third Street
Rawlins, Wyoming 82301

Dear Mr. Kolkman:

The OSM staff has reviewed the draft environmental impact statement for the Savery Project Preference Right Coal Lease Applications, Carbon County, Wyoming, and Moffat and Routt Counties, Colorado, and recommends that the following comments be taken into consideration in the final document.

General

25-1 o In accordance with 40 CFR 1502.2(b), the resources which would not be significantly impacted (page 15) by the Savery Project should be discussed in enough detail to show why a thorough analysis in the draft EIS is not needed.

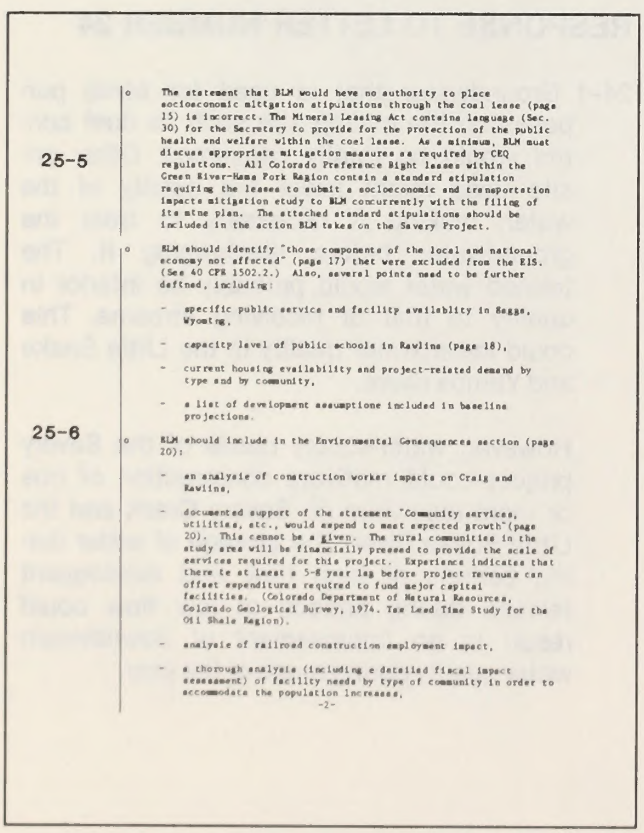
Geology And Mineral Resources

25-2 o The depth to mineable coal seams in conjunction with a discussion of the feasibility of surface mining should be provided. If feasible, surface mining should be presented as a viable alternative with corresponding environmental consequences analyses.

25-3 o The coal sulfur content was erroneously indicated as 55 percent in Table 2 (page 3). A later reference (page 16) indicates a 0.58 percent sulfur content.

Socioeconomics

25-4 o The proposed mine (as well as the proposed powerplant) would most likely come under the authority of the Wyoming Industrial Development Information and Siting Act (page 14).



25-5 o The statement that BLM would have no authority to place socioeconomic mitigation stipulations through the coal lease (page 15) is incorrect. The Mineral Leasing Act contains language (Sec. 30) for the Secretary to provide for the protection of the public health and welfare within the coal lease. As a minimum, BLM must discuss appropriate mitigation measures as required by CEQ regulations. All Colorado Preference Right leases within the Green River-Hams Fork Region contain a standard stipulation requiring the lessee to submit a socioeconomic and transportation impacts mitigation study to BLM concurrently with the filing of its mine plan. The attached standard stipulations should be included in the action BLM takes on the Savery Project.

25-6 o BLM should identify "those components of the local and national economy not affected" (page 17) that were excluded from the EIS. (See 40 CFR 1502.2.) Also, several points need to be further defined, including:

- specific public service and facility availablity in Regge, Wyoming,
- capacity level of public schools in Rawlins (page 18),
- current housing availability and project-related demand by type and by community,
- a list of development assumptions included in baseline projections.

o BLM should include in the Environmental Consequences section (page 20):

- an analysis of construction worker impacts on Craig and Rawlins,
- documented support of the statement "Community services, utilities, etc., would expand to meet expected growth"(page 20). This cannot be a given. The rural communities in the study area will be financially pressed to provide the scale of services required for this project. Experience indicates that there is at least a 5-8 year lag before project revenues can offset expenditures required to fund major capital facilities. (Colorado Department of Natural Resources, Colorado Geological Survey, 1974. Tax Lead Time Study for the Oil Shale Region).
- analysis of railroad construction employment impact,
- a thorough analysis (including a detailed fiscal impact assessment) of facility needs by type of community in order to accommodate the population increases.

-2-

RESPONSES TO LETTER NUMBER 25

25-1 See response number 25-6.

25-2 The depth to mineable coal seams varies from approximately 200 to 1,000 feet. The coal seams are generally unconformably overlain by more recent sediments. This configuration is more logically developed by underground methods and, therefore, surface mining is neither proposed nor considered in this EIS.

25-3 Table 2 has been revised. The correct figure is 0.58 percent.

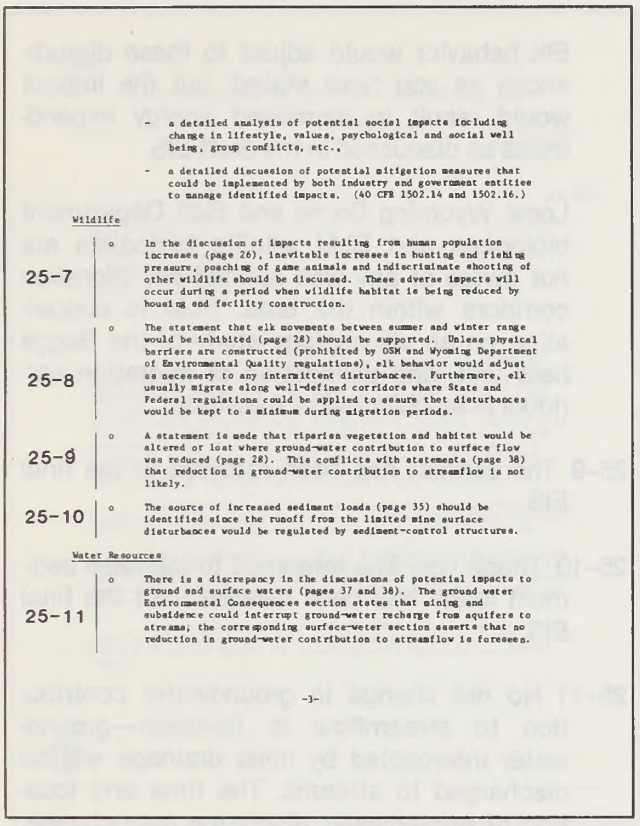
25-4 Yes, the Savery mine would fall under the jurisdiction of Wyoming Industrial Siting Administration. No power plant is proposed.

25-5 Thank you. See Natural Resource Defense Council (letter number 23) and additions to the Economic section. The mitigation measures include the items mentioned in your comment.

25-6 40 CFR 1502-2 states, "Impacts shall be discussed in proportion to their significance." Furthermore 40 CFR 1501.7(a)(3) states, "During scoping the preparer shall identify and eliminate from detailed study the issues which are not significant or which have been covered by prior environmental review."

The Savery PRLA Site-Specific Environmental Report discusses resources not significantly affected. Any additional items were eliminated because they were not identified through scoping as signficant. Detailed information as requested in you letter, is available from the Rawlins District office.

1. Construction worker impacts. These impacts are addressed in the EIS but do not specifically detail the impacts to Craig and Rawlins. These communities probably would be the dominant supply for the construction labor market. As is pointed out on page 29 of the draft EIS, housing requirements would most likely be temporary, with most construction workers leav-



- a detailed analysis of potential social impacts including change in lifestyle, values, psychological and social well being, group conflicts, etc.,

- a detailed discussion of potential mitigation measures that could be implemented by both industry and government entities to manage identified impacts. (40 CFR 1502.14 and 1502.16.)

Wildlife

25-7 o In the discussion of impacts resulting from human population increases (page 26), inevitable increases in hunting and fishing preasure, poaching of game animals and indiscriminate shooting of other wildlife should be discussed. These adverse impacts will occur during a period when wildlife habitat is being reduced by housing and facility construction.

25-8 o The statement that elk movements between summer and winter range would be inhibited (page 28) should be supported. Unless physical barriers are constructed (prohibited by OSM and Wyoming Department of Environmental Quality regulations), elk behavior would adjust as necessary to any intermittent disturbances. Furthermore, elk usually migrate along well-defined corridors where State and Federal regulations could be applied to assure that disturbances would be kept to a minimum during migration periods.

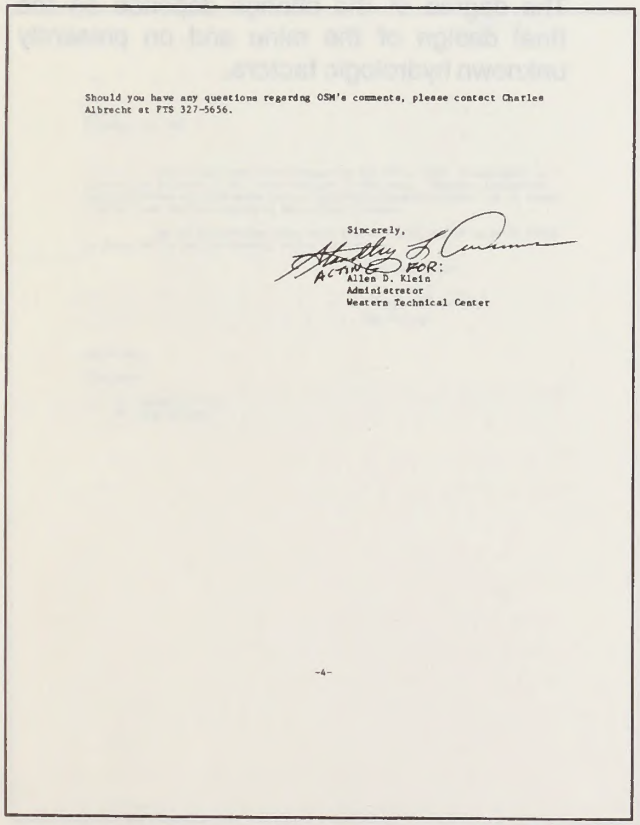
25-9 o A statement is made that riparian vegetation and habitat would be altered or lost where ground-water contribution to surface flow was reduced (page 28). This conflicts with statements (page 38) that reduction in ground-water contribution to streamflow is not likely.

25-10 o The source of increased sediment loads (page 35) should be identified since the runoff from the limited mine surface disturbances would be regulated by sediment-control structures.

Water Resources

25-11 o There is a discrepancy in the discussions of potential impacts to ground and surface waters (pages 37 and 38). The ground water Environmental Consequences section states that mining and subsidence could interrupt ground-water recharge from aquifers to streams; the corresponding surface-water section asserts that no reduction in ground-water contribution to streamflow is foreseen.

-3-



Should you have any questions regarding OSM's comments, please contact Charles Albrecht at FTS 327-5656.

Sincerely,

ACTING FOR:
Allen D. Klein
Administrator
Western Technical Center

-4-

ing their families in Craig and Rawlins and commuting to and from the site.

2. Documented Support of the Statement "Community services, utilities, etc...." Agreed, and this is the rationale used for indicating that residential and commercial development in the Little Snake River Valley area would take 5 to 10 years after mining operations began before all community service needs would be met.

3. Analysis of Railroad Construction Impact. The impact of this phase of construction is addressed on page 20 of the draft EIS.

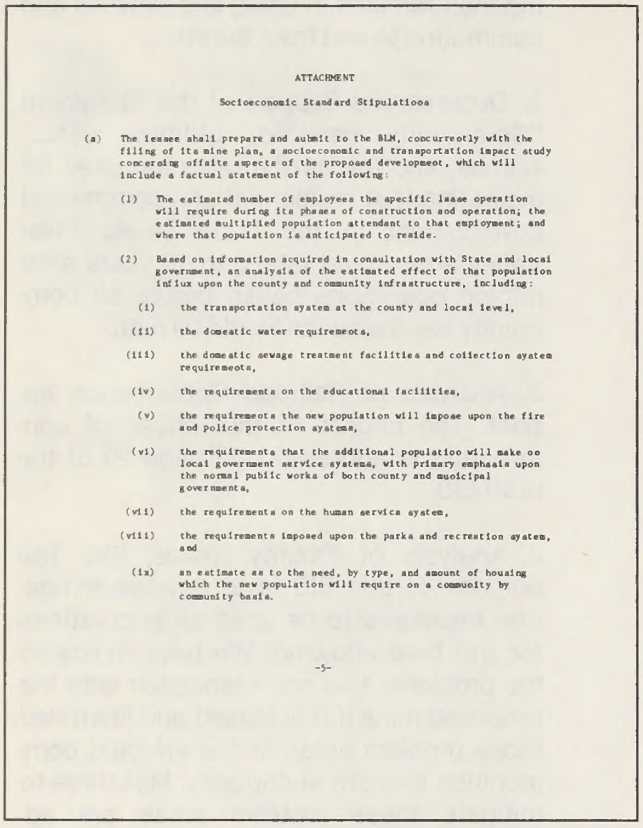
4. Analysis of Facility Needs, Etc. The purpose of this EIS is to develop mitigation measures to be used as stipulations for the final showing. We have indicated the problems that are associated with the proposed mine if it is leased and identified those problem areas in the affected communities that are at capacity. Measures to mitigate these problem areas are addressed in the final EIS.

5. Analysis of potential social impacts. See addition to text.

6. Discussion of Mitigation Measures. See response number 4 above.

25-7 Poaching of game animals and indiscriminate shooting of other wildlife are additional impacts that would result from human population increases in the area. Although these impacts are not believed to be significant compared to the predicted land-use changes, the final EIS has been revised. Increases in hunting and fishing pressure have been discussed in the revised Recreation section.

25-8 Human activity and development would inhibit the free movement of this hunted population. This does not imply that migration routes would be blocked. The statement conveys the concept that additional disturbances would result in avoidance behavior.



ATTACHMENT

Socioeconomic Standard Stipulations

(a) The lessee shall prepare and submit to the BLM, concurrently with the filing of its mine plan, a socioeconomic and transportation impact study concerning offsite aspects of the proposed development, which will include a factual statement of the following:

(1) The estimated number of employees the specific lease operation will require during its phases of construction and operation; the estimated multiplied population attendant to that employment; and where that population is anticipated to reside.

(2) Based on information acquired in consultation with State and local government, an analysis of the estimated effect of that population influx upon the county and community infrastructure, including:

(i) the transportation system at the county and local level,

(ii) the domestic water requirements,

(iii) the domestic sewage treatment facilities and collection system requirements,

(iv) the requirements on the educational facilities,

(v) the requirements the new population will impose upon the fire and police protection systems,

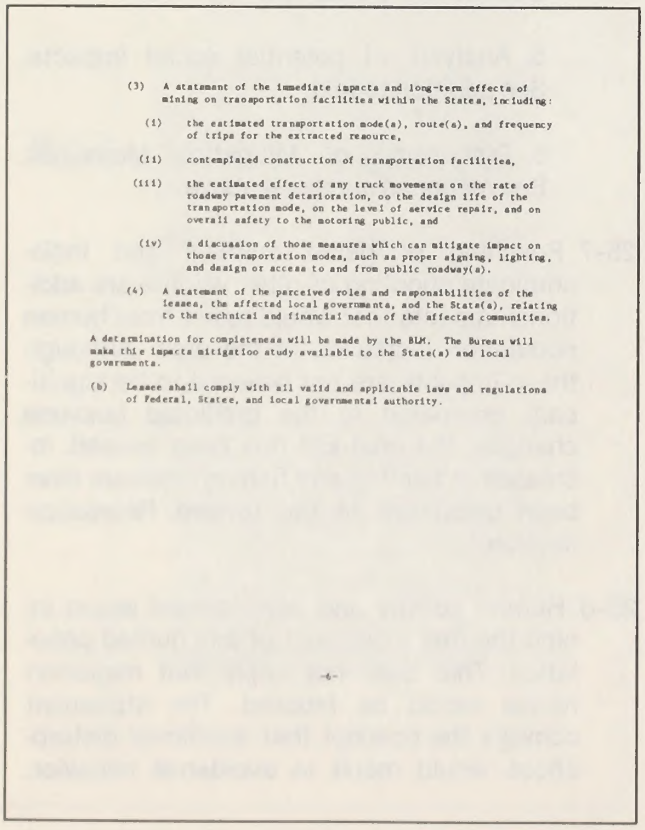
(vi) the requirements that the additional population will make on local government service systems, with primary emphasis upon the normal public works of both county and municipal governments,

(vii) the requirements on the human service system,

(viii) the requirements imposed upon the parks and recreation system, and

(ix) an estimate as to the need, by type, and amount of housing which the new population will require on a community by community basis.

-5-



(3) A statement of the immediate impacts and long-term effects of mining on transportation facilities within the States, including:

(i) the estimated transportation mode(s), route(s), and frequency of trips for the extracted resource,

(ii) contemplated construction of transportation facilities,

(iii) the estimated effect of any truck movements on the rate of roadway pavement deterioration, on the design life of the transportation mode, on the level of service repair, and on overall safety to the motoring public, and

(iv) a discussion of those measures which can mitigate impact on those transportation modes, such as proper signing, lighting, and design or access to and from public roadway(s).

(4) A statement of the perceived roles and responsibilities of the lessee, the affected local governments, and the State(s), relating to the technical and financial needs of the affected communities.

A determination for completeness will be made by the BLM. The Bureau will make this impacts mitigation study available to the State(s) and local governments.

(b) Lessee shall comply with all valid and applicable laws and regulations of Federal, States, and local governmental authority.

-6-

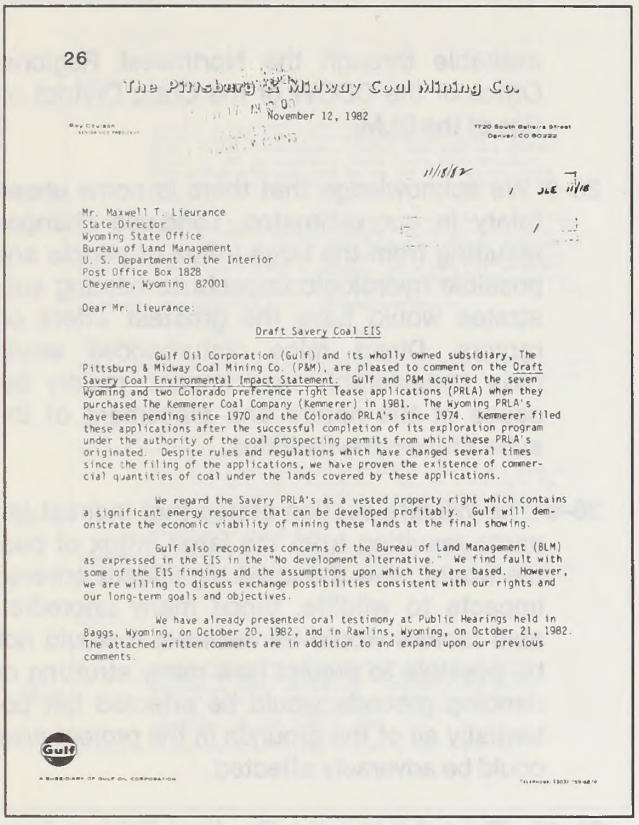
Elk behavior would adjust to these disturbances as you have stated, but the impact would result in increased energy expenditures as discussed in the draft EIS.

Local Wyoming Game and Fish Department biologists and BLM wildlife biologists are not aware of any well defined elk migration corridors within the area. BLM is cooperating on an elk ecology study of the Baggs herd unit, and delineation of migration corridors is an objective of the study.

25-9 The conflict has been resolved in the final EIS.

25-10 Thank you. The reference to increase sediment loads has been deleted from the final EIS.

25-11 No net change in groundwater contribution to streamflow is foreseen—groundwater intercepted by mine drainage will be discharged to streams. The time and location of groundwater discharge may change. The degree of the change depends on the final design of the mine and on presently unknown hydrologic factors.



26

The Pittsburg & Midway Coal Mining Co.

November 12, 1982

Roy Coulson
[illegible]

1720 South Bellaire Street
Denver, CO 80222

Mr. Maxwell T. Lieurance
State Director
Wyoming State Office
Bureau of Land Management
U. S. Department of the Interior
Post Office Box 1828
Cheyenne, Wyoming 82001

Dear Mr. Lieurance:

Draft Savery Coal EIS

Gulf Oil Corporation (Gulf) and its wholly owned subsidiary, The Pittsburg & Midway Coal Mining Co. (P&M), are pleased to comment on the Draft Savery Coal Environmental Impact Statement. Gulf and P&M acquired the seven Wyoming and two Colorado preference right lease applications (PRLA) when they purchased The Kemmerer Coal Company (Kemmerer) in 1981. The Wyoming PRLA's have been pending since 1970 and the Colorado PRLA's since 1974. Kemmerer filed these applications after the successful completion of its exploration program under the authority of the coal prospecting permits from which these PRLA's originated. Despite rules and regulations which have changed several times since the filing of the applications, we have proven the existence of commercial quantities of coal under the lands covered by these applications.

We regard the Savery PRLA's as a vested property right which contains a significant energy resource that can be developed profitably. Gulf will demonstrate the economic viability of mining these lands at the final showing.

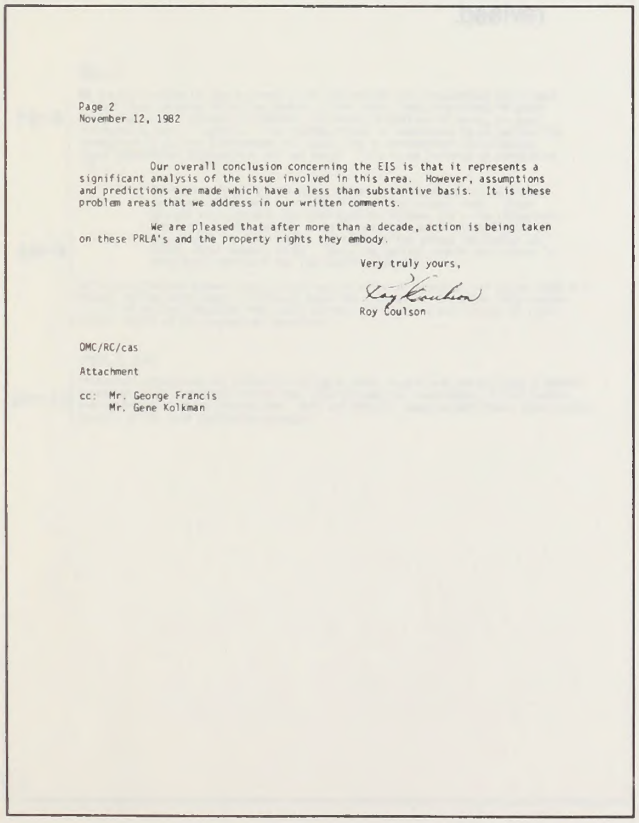
Gulf also recognizes concerns of the Bureau of Land Management (BLM) as expressed in the EIS in the "No development alternative." We find fault with some of the EIS findings and the assumptions upon which they are based. However, we are willing to discuss exchange possibilities consistent with our rights and our long-term goals and objectives.

We have already presented oral testimony at Public Hearings held in Baggs, Wyoming, on October 20, 1982, and in Rawlins, Wyoming, on October 21, 1982. The attached written comments are in addition to and expand upon our previous comments.

Gulf

A SUBSIDIARY OF GULF OIL CORPORATION

Telephone (303) 759-6810



Page 2
November 12, 1982

Our overall conclusion concerning the EIS is that it represents a significant analysis of the issue involved in this area. However, assumptions and predictions are made which have a less than substantive basis. It is these problem areas that we address in our written comments.

We are pleased that after more than a decade, action is being taken on these PRLA's and the property rights they embody.

Very truly yours,

Roy Coulson

OMC/RC/cas

Attachment

cc: Mr. George Francis
Mr. Gene Kolkman

RESPONSES TO LETTER NUMBER 26

26-1 We have changed the wording in the Summary so the reader will not be mislead, thank you.

As discussed in the draft EIS, the BLM has no control over local governments or planning and zoning restrictions. Housing and commercial developments are unmitigatable, indirect impacts that would result from a federal action.

The Little Snake River Valley contains crucial wildlife areas (refer to Maps 8 through 13 in the draft EIS). Any expansion of the towns of Baggs, Dixon, or Savery would also encroach on valuable wildlife habitat. If all development were concentrated around these communities, the impact to wildlife habitat would be significantly less than if development were scattered throughout the area.

26-2 Table 2 has been revised. The withdrawal of application W-0324037 has been noted.

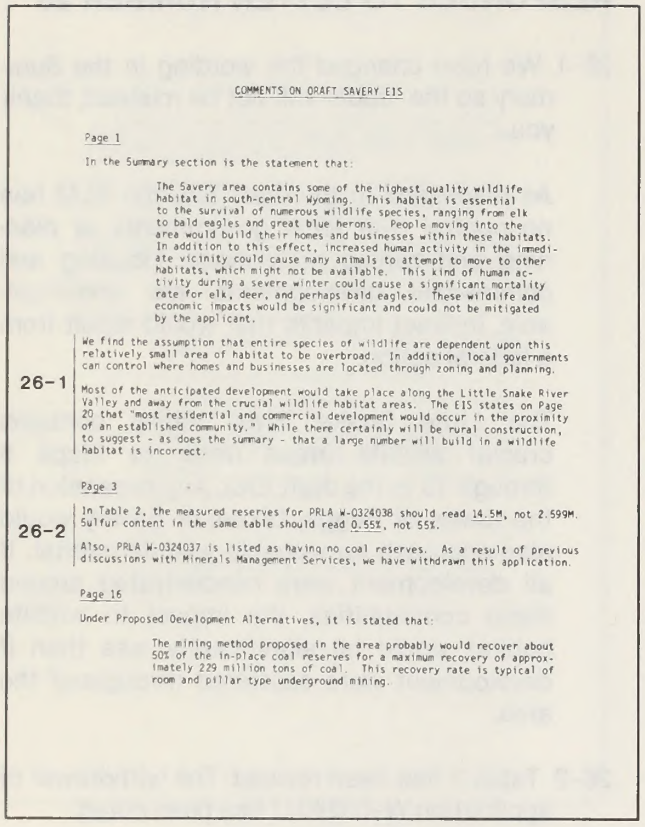
26-3 The final EIS has been revised to indicate the potential use of longwall mining methods.

26-4 Thank you for pointing out this potential concern. We have modified this discussion in the final EIS.

26-5 See Bureau of Mines response, letter number 7.

26-6 We agree that mining activity is generally not a unpredictable disturbance and did not mean to infer that it was in the EIS.

26-7 The quote in your comment is from a staff report prepared by the Northwest Regional Office of the Colorado Division of Wildlife (CDOW) in response to a request from the Craig District for consultation regarding effects of mining PRLA tracts C-3605 and C-3606 on Colorado threatened and endangered species and resident species of interest to the state of Colorado. This report is



COMMENTS ON DRAFT SAVERY EIS

Page 1

In the Summary section is the statement that:

> The Savery area contains some of the highest quality wildlife habitat in south-central Wyoming. This habitat is essential to the survival of numerous wildlife species, ranging from elk to bald eagles and great blue herons. People moving into the area would build their homes and businesses within these habitats. In addition to this effect, increased human activity in the immediate vicinity could cause many animals to attempt to move to other habitats, which might not be available. This kind of human activity during a severe winter could cause a significant mortality rate for elk, deer, and perhaps bald eagles. These wildlife and economic impacts would be significant and could not be mitigated by the applicant.

26-1 We find the assumption that entire species of wildlife are dependent upon this relatively small area of habitat to be overbroad. In addition, local governments can control where homes and businesses are located through zoning and planning.

Most of the anticipated development would take place along the Little Snake River Valley and away from the crucial wildlife habitat areas. The EIS states on Page 20 that "most residential and commercial development would occur in the proximity of an established community." While there certainly will be rural construction, to suggest - as does the summary - that a large number will build in a wildlife habitat is incorrect.

Page 3

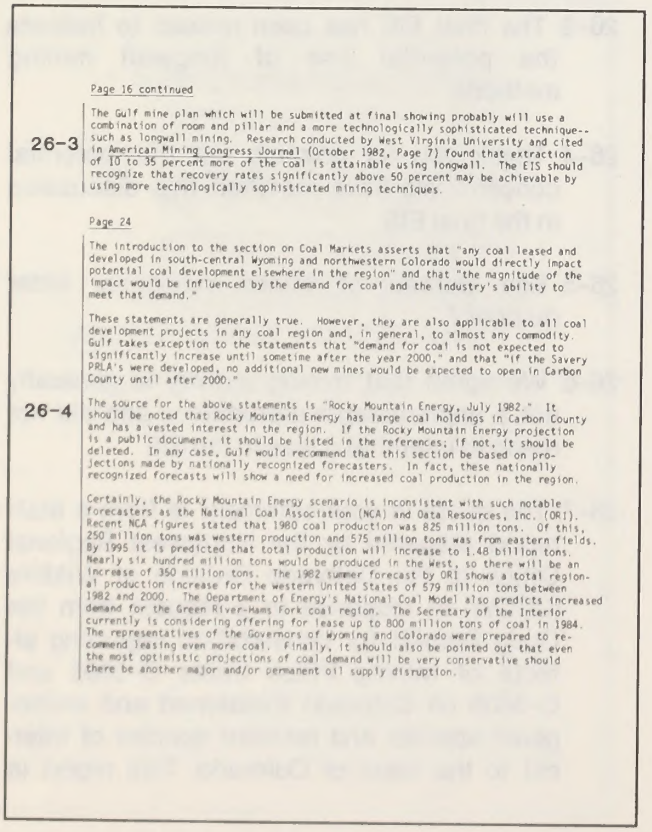
26-2 In Table 2, the measured reserves for PRLA W-0324038 should read 14.5M, not 2.599M. Sulfur content in the same table should read 0.55%, not 55%.

Also, PRLA W-0324037 is listed as having no coal reserves. As a result of previous discussions with Minerals Management Services, we have withdrawn this application.

Page 16

Under Proposed Development Alternatives, it is stated that:

> The mining method proposed in the area probably would recover about 50% of the in-place coal reserves for a maximum recovery of approximately 229 million tons of coal. This recovery rate is typical of room and pillar type underground mining.



Page 16 continued

26-3 The Gulf mine plan which will be submitted at final showing probably will use a combination of room and pillar and a more technologically sophisticated technique--such as longwall mining. Research conducted by West Virginia University and cited in American Mining Congress Journal (October 1982, Page 7) found that extraction of 10 to 35 percent more of the coal is attainable using longwall. The EIS should recognize that recovery rates significantly above 50 percent may be achievable by using more technologically sophisticated mining techniques.

Page 24

The introduction to the section on Coal Markets asserts that "any coal leased and developed in south-central Wyoming and northwestern Colorado would directly impact potential coal development elsewhere in the region" and that "the magnitude of the impact would be influenced by the demand for coal and the industry's ability to meet that demand."

These statements are generally true. However, they are also applicable to all coal development projects in any coal region and, in general, to almost any commodity. Gulf takes exception to the statements that "demand for coal is not expected to significantly increase until sometime after the year 2000," and that "if the Savery PRLA's were developed, no additional new mines would be expected to open in Carbon County until after 2000."

26-4 The source for the above statements is "Rocky Mountain Energy, July 1982." It should be noted that Rocky Mountain Energy has large coal holdings in Carbon County and has a vested interest in the region. If the Rocky Mountain Energy projection is a public document, it should be listed in the references; if not, it should be deleted. In any case, Gulf would recommend that this section be based on projections made by nationally recognized forecasters. In fact, these nationally recognized forecasts will show a need for increased coal production in the region.

Certainly, the Rocky Mountain Energy scenario is inconsistent with such notable forecasters as the National Coal Association (NCA) and Data Resources, Inc. (DRI). Recent NCA figures stated that 1980 coal production was 825 million tons. Of this, 250 million tons was western production and 575 million tons was from eastern fields. By 1995 it is predicted that total production will increase to 1.48 billion tons. Nearly six hundred million tons would be produced in the West, so there will be an increase of 350 million tons. The 1982 summer forecast by DRI shows a total regional production increase for the western United States of 579 million tons between 1982 and 2000. The Department of Energy's National Coal Model also predicts increased demand for the Green River-Hams Fork coal region. The Secretary of the Interior currently is considering offering for lease up to 800 million tons of coal in 1984. The representatives of the Governors of Wyoming and Colorado were prepared to recommend leasing even more coal. Finally, it should also be pointed out that even the most optimistic projections of coal demand will be very conservative should there be another major and/or permanent oil supply disruption.

available through the Northwest Regional Office of the CDOW or the Craig District office of the BLM.

26-8 We acknowledge that there is some uncertainty in our estimates. Land-use changes resulting from the large influx of people and possible hydrologic impacts to nesting substrates would have the greatest affect on raptors. Direct mine disturbances would have considerably less impact, mainly because of the nature and placement of the subsurface mine facilities.

26-9 The Wildlife section states that indirect impacts resulting from the large influx of people would have the most significant adverse impacts to wildlife. Since many unpredictable factors would be involved, it would not be possible to predict how many strutting or dancing grounds would be effected but potentially all of the grounds in the project area could be adversely affected.

26-10 The point is valid. The final EIS has been revised.

Page 25

The EIS states that:

> Since PRLA's are outside of the competitive aspect of BLM's coal program, this alternative could reduce competition in the market place. If this alternative were accepted, there would be a distinct possibility that the competitive leasing tracts, which were determined acceptable for development for the 1984 coal lease sale, would remain undeveloped because of the amount of coal production from the PRLA's.

26-5

This is an inappropriate analysis. The extent that issuance of the preference right leases will affect the number of bidders for Federal coal leases, and therefore, the revenue stream from Federal coal leasing should not be a criterion for evaluating the environmental impact of issuing the leases. Competition in the market place means competition in the marketing of coal to consumers - not in BLM's coal leasing program. Consequently, any coal development which would take place on the Savery properties would increase overall competition in the coal consumer's market place. This is the market place which needs to be of paramount consideration.

Pages 26-37

We have several areas of disagreement with the wildlife portion of the document. Our experience at other mines and some recent literature does not support several of the assumptions.

Page 28

We do not feel that the situation is fully presented in the statement that:

> Eighty to 85 percent of the elk would move at lease 1/2 mile (line-of-sight) from unpredictable disturbances. Thus, the continuity of the use of the wintering habitat would be disrupted by human activity within the project area. This disruption would inhibit the free movement of elk from the summer range to the winter range, as well as movement within the CWR itself.

26-6

Experience at the mines of several companies in northwest Colorado has shown this not to be the case. Also, the statement does not take into account the adaptability of the animals. Mining activity quickly ceases being an unpredictable disturbance.

Page 28

The Colorado Division of Wildlife is quoted as believing that:

> Adjacent winter ranges in Colorado are not capable of supporting displaced mule deer or elk. Colorado Division of Wildlife representatives further conclude that: "Colorado Division of Wildlife post-season population objectives could not be maintained, resulting in a long-term downward trend in mule deer and elk population." (Wildlife Analysis, 1981)

26-7

Is there data supporting the belief of the Colorado Division of Wildlife?

Page 30

26-8 We are not assured of the accuracy of the assumption that development would have a significant adverse effect on raptors in the area. Data from mines in other areas show slight decrease in numbers, voluntary relocation of nests, or even increases by certain species. The adverse effect is predicated by an earlier EIS assumption of loss of cottonwoods and aspens due to groundwater disturbances. These groundwater disturbances may not occur. This is an instance of pyramiding "if's."

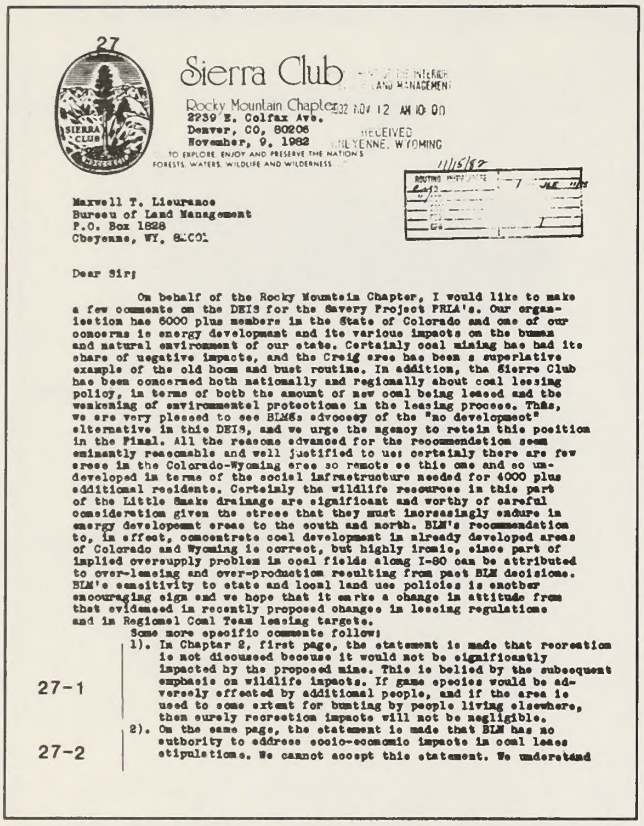
> Thirteen sage grouse strutting grounds and two sharp-tailed grouse dancing grounds have been identified in the project area. These grounds are essential for both species, because the birds concentrate here annually for mating. Nesting usually occurs within 2 miles of the grounds for sage grouse and sharp-tailed grouse (Wallestad and Pyrah, 1974; Pepper, 1972). Thus, the habitat within this radius is considered important for reproductive success.

26-9

Only one strutting ground (sage grouse) may be affected by mining activities (Map 13). Recent studies have shown a voluntary inter-lek movement by the birds that creates a self mitigating situation that would further minimize the possibility of significant impact on the grounds or the birds.

Pages 35 & 37

26-10 Statements concerning the effect of mining on water supply and quality have a general correctness but apparently do not take into account the requirements for mitigation and augmentation under Wyoming law. Gulf and P&M will have to meet these requirements as part of the mine permitting process.



27

Sierra Club

Rocky Mountain Chapter
2239 E. Colfax Ave.
Denver, CO, 80206
November, 9, 1982

TO EXPLORE, ENJOY AND PRESERVE THE NATION'S FORESTS, WATERS, WILDLIFE AND WILDERNESS

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BUREAU OF LAND MANAGEMENT
1982 NOV 12 AM 10 00
CHEYENNE, WYOMING

11/15/82

Marvell T. Lieurance
Bureau of Land Management
P.O. Box 1828
Cheyenne, WY. 82001

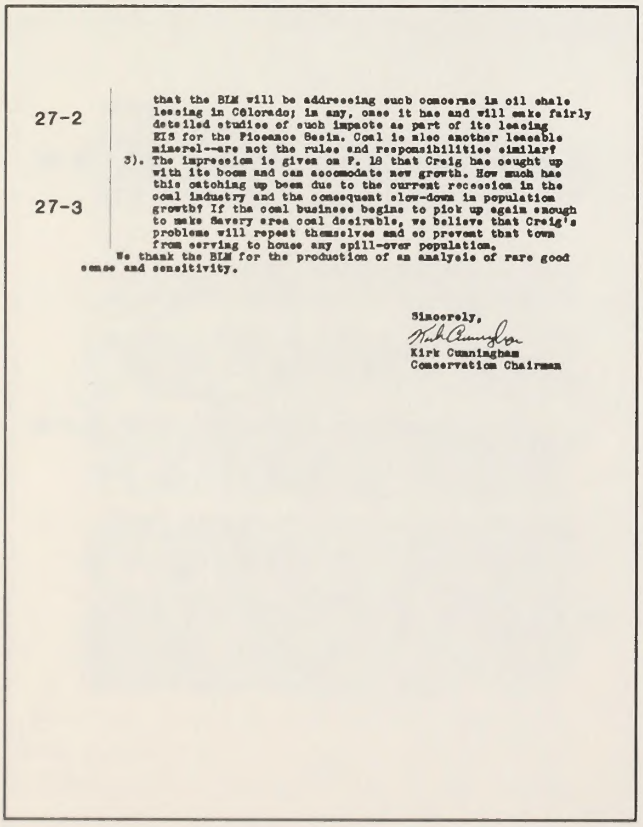
Dear Sir;

On behalf of the Rocky Mountain Chapter, I would like to make a few comments on the DEIS for the Savery Project PRLA's. Our organization has 6000 plus members in the State of Colorado and one of our concerns is energy development and its various impacts on the human and natural environment of our state. Certainly coal mining has had its share of negative impacts, and the Craig area has been a superlative example of the old boom and bust routine. In addition, the Sierra Club has been concerned both nationally and regionally about coal leasing policy, in terms of both the amount of new coal being leased and the weakening of environmental protections in the leasing process. Thus, we are very pleased to see BLM's advocacy of the "no development" alternative in this DEIS, and we urge the agency to retain this position in the Final. All the reasons advanced for the recommendation seem eminently reasonable and well justified to us; certainly there are few areas in the Colorado-Wyoming area so remote as this one and so undeveloped in terms of the social infrastructure needed for 4000 plus additional residents. Certainly the wildlife resources in this part of the Little Snake drainage are significant and worthy of careful consideration given the stress that they must increasingly endure in energy development areas to the south and north. BLM's recommendation to, in effect, concentrate coal development in already developed areas of Colorado and Wyoming is correct, but highly ironic, since part of implied oversupply problem in coal fields along I-80 can be attributed to over-leasing and over-production resulting from past BLM decisions. BLM's sensitivity to state and local land use policies is another encouraging sign and we hope that it marks a change in attitude from that evidenced in recently proposed changes in leasing regulations and in Regional Coal Team leasing targets.

Some more specific comments follow;

27-1 1). In Chapter 2, first page, the statement is made that recreation is not discussed because it would not be significantly impacted by the proposed mine. This is belied by the subsequent emphasis on wildlife impacts. If game species would be adversely effected by additional people, and if the area is used to some extent for hunting by people living elsewhere, then surely recreation impacts will not be negligible.

27-2 2). On the same page, the statement is made that BLM has no authority to address socio-economic impacts in coal lease stipulations. We cannot accept this statement. We understand



27-2 that the BLM will be addressing such concerns in oil shale leasing in Colorado; in any, case it has and will make fairly detailed studies of such impacts as part of its leasing EIS for the Piceance Basin. Coal is also another leasable mineral--are not the rules and responsibilities similar?

27-3 3). The impression is given on P. 18 that Craig has caught up with its boom and can accomodate new growth. How much has this catching up been due to the current recession in the coal industry and the consequent slow-down in population growth? If the coal business begins to pick up again enough to make Savery area coal desirable, we believe that Craig's problems will repeat themselves and so prevent that town from serving to house any spill-over population.

We thank the BLM for the production of an analysis of rare good sense and sensitivity.

Sincerely,

Kirk Cunningham
Conservation Chairman

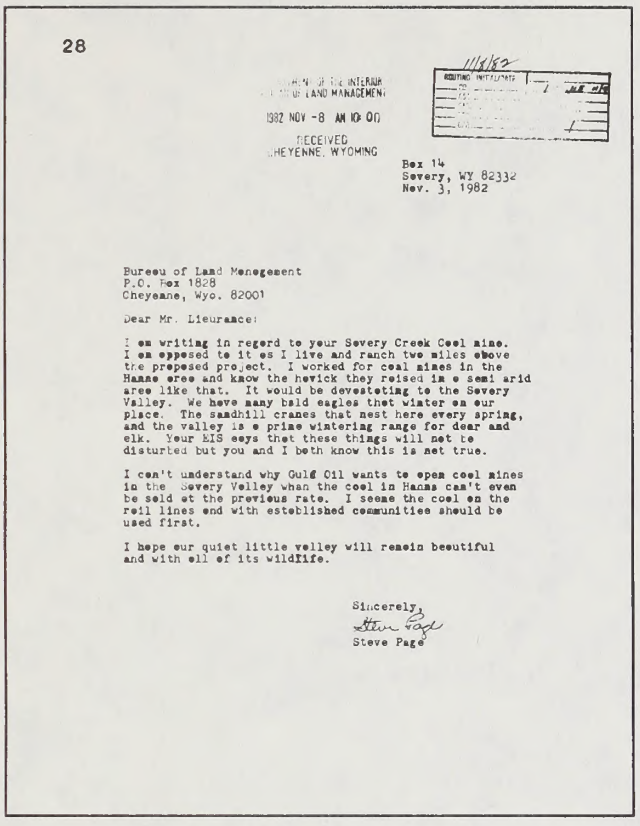
RESPONSES TO LETTER NUMBER 27

27-1 Thank you. A Recreation section has been added to the final EIS.

27-2 Thank you, we stand corrected. See Natural Resource Defense Council response, number 23.

27-3 Craig has surplus housing available. If the coal market improves, there is possibility that Craig could be adversely impacted. In the long term we would expect population in-migration to the Savery areas.

28



...OF THE INTERIOR
...OF LAND MANAGEMENT

1982 NOV -8 AM 10:00

RECEIVED
CHEYENNE, WYOMING

11/8/82
ROUTING INITIALS
JLE

Box 14
Severy, WY 82332
Nov. 3, 1982

Bureau of Land Management
P.O. Box 1828
Cheyenne, Wyo. 82001

Dear Mr. Lieurance:

I am writing in regard to your Severy Creek Coal mine. I am opposed to it as I live and ranch two miles above the proposed project. I worked for coal mines in the Hanna area and know the hevick they raised in a semi arid area like that. It would be devestating to the Severy Valley. We have many bald eagles that winter on our place. The sandhill cranes that nest here every spring, and the valley is a prime wintering range for deer and elk. Your EIS says that these things will not be disturbed but you and I both know this is not true.

I can't understand why Gulf Oil wants to open coal mines in the Severy Valley when the coal in Hanna can't even be sold at the previous rate. I seems the coal on the rail lines and with established communities should be used first.

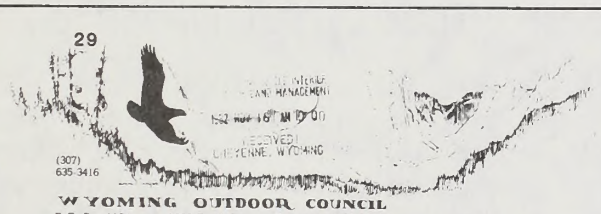
I hope our quiet little valley will remain beautiful and with all of its wildlife.

Sincerely,
Steve Page

NO RESPONSE

Thank you for your comment. The information which you have provided is now reflected in the final EIS.

29



...OF THE INTERIOR
...LAND MANAGEMENT

1982 NOV 16 AM 10:00

RECEIVED
CHEYENNE, WYOMING

(307)
635-3416

WYOMING OUTDOOR COUNCIL
P.O. Box 1184 1603 Capitol Cheyenne, WY 82001

November 15, 1982

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Wyoming Sierra Club

Mr. Maxwell T. Lieurance
State Director
Bureau of Land Management
Box 1828
Cheyenne, WY 82001

11/16/82
ROUTING
JLE 11/19

Dear Mr. Lieurance:

RE: DRAFT SAVERY COAL ENVIRONMENTAL IMPACT STATEMENT

I am submitting the following comments on the Draft Savery Coal EIS on behalf of the Wyoming Outdoor Council. The Wyoming Outdoor Council is a citizens' conservation organization with a statewide membership. Our members in the Carbon County area have a long-standing interest in the Savery PRLA's and in the issue of coal development in the Carbon County area.

We wish to commend the BLM for recommending against the development of the Savery PRLA's. However, we find the DEIS inadequate in a number of ways: 1) DEIS has failed to demonstrate that the Savery PRLA's can be economically developed; 2) the DEIS does not deal with the cumulative, synergistic impacts of this coal development. It is especially inadequate in its treatment of the socio-economic impacts of the PRLA development.

29-1

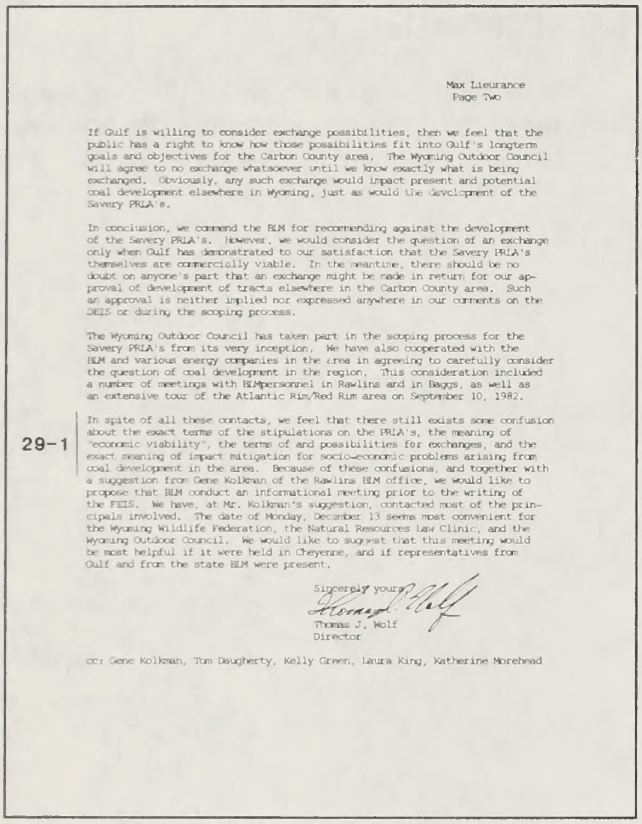
The Wyoming Outdoor Council strongly feels that these two points are related to each other. Impact mitigation is a costly process, especially in an undeveloped area like the Little Snake River Valley. The definition of "commercial quantities of coal" must be keyed to mitigation measures that are carefully spelled out before construction begins. In the case of socio-economic impacts, such mitigation might be possible, but Gulf must prove that it is possible, and that the costs of such mitigation are included in the determination of the economic viability of the coal resource.

We also feel that the above-mentioned demonstration of economic viability should occur before the final showing. No reasonable Final Environmental Impact Statement can be written without a commitment by Gulf to mitigation measures and to a mining techniques plan which also is subject to the economic viability test.

RESPONSE TO LETTER NUMBER 29

29-1 The EIS does not attempt to demonstrate the economic viability of the Savery PRLAs. That determination will be made after the applicant submits the final showing.

The draft EIS does not identify socioeconomic mitigation measures. We have included a section in the Economic portion of the final EIS which lists mitigation measures. See Natural Resource Defense Council response, number 23.



Max Lieurance
Page Two

If Gulf is willing to consider exchange possibilities, then we feel that the public has a right to know how those possibilities fit into Gulf's longterm goals and objectives for the Carbon County area. The Wyoming Outdoor Council will agree to no exchange whatsoever until we know exactly what is being exchanged. Obviously, any such exchange would impact present and potential coal development elsewhere in Wyoming, just as would the development of the Savery PRLA's.

In conclusion, we commend the BLM for recommending against the development of the Savery PRLA's. However, we would consider the question of an exchange only when Gulf has demonstrated to our satisfaction that the Savery PRLA's themselves are commercially viable. In the meantime, there should be no doubt on anyone's part that an exchange might be made in return for our approval of development of tracts elsewhere in the Carbon County area. Such an approval is neither implied nor expressed anywhere in our comments on the DEIS or during the scoping process.

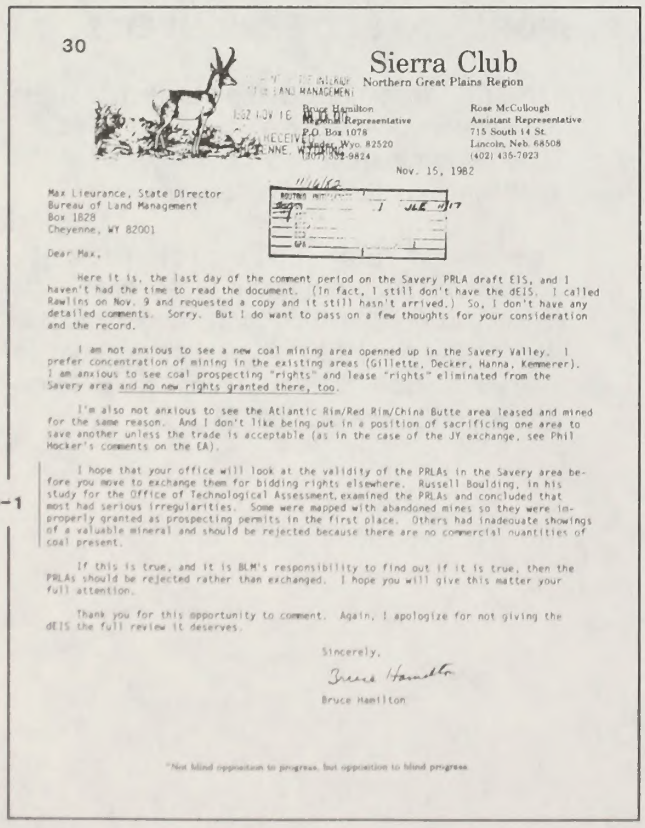
The Wyoming Outdoor Council has taken part in the scoping process for the Savery PRLA's from its very inception. We have also cooperated with the BLM and various energy companies in the area in agreeing to carefully consider the question of coal development in the region. This consideration included a number of meetings with BLM personnel in Rawlins and in Baggs, as well as an extensive tour of the Atlantic Rim/Red Rim area on September 10, 1982.

29-1 In spite of all these contacts, we feel that there still exists some confusion about the exact terms of the stipulations on the PRLA's, the meaning of "economic viability", the terms of and possibilities for exchanges, and the exact meaning of impact mitigation for socio-economic problems arising from coal development in the area. Because of these confusions, and together with a suggestion from Gene Kolkman of the Rawlins BLM office, we would like to propose that BLM conduct an informational meeting prior to the writing of the FEIS. We have, at Mr. Kolkman's suggestion, contacted most of the principals involved. The date of Monday, December 13 seems most convenient for the Wyoming Wildlife Federation, the Natural Resources Law Clinic, and the Wyoming Outdoor Council. We would like to suggest that this meeting would be most helpful if it were held in Cheyenne, and if representatives from Gulf and from the state BLM were present.

Sincerely yours,

Thomas J. Wolf
Director

cc: Gene Kolkman, Tom Daugherty, Kelly Green, Laura King, Katherine Morehead



30

Sierra Club
Northern Great Plains Region

Bruce Hamilton
Regional Representative
P.O. Box 1078
Cheyenne, Wyo 82520
(307) 634-9824

Rose McCullough
Assistant Representative
715 South 14 St.
Lincoln, Neb. 68508
(402) 436-7023

Nov. 15, 1982

Max Lieurance, State Director
Bureau of Land Management
Box 1828
Cheyenne, WY 82001

Dear Max,

Here it is, the last day of the comment period on the Savery PRLA draft EIS, and I haven't had the time to read the document. (In fact, I still don't have the dEIS. I called Rawlins on Nov. 9 and requested a copy and it still hasn't arrived.) So, I don't have any detailed comments. Sorry. But I do want to pass on a few thoughts for your consideration and the record.

I am not anxious to see a new coal mining area openned up in the Savery Valley. I prefer concentration of mining in the existing areas (Gillette, Decker, Hanna, Kemmerer). I am anxious to see coal prospecting "rights" and lease "rights" eliminated from the Savery area and no new rights granted there, too.

I'm also not anxious to see the Atlantic Rim/Red Rim/China Butte area leased and mined for the same reason. And I don't like being put in a position of sacrificing one area to save another unless the trade is acceptable (as in the case of the JY exchange, see Phil Hocker's comments on the EA).

30-1 I hope that your office will look at the validity of the PRLAs in the Savery area before you move to exchange them for bidding rights elsewhere. Russell Boulding, in his study for the Office of Technological Assessment, examined the PRLAs and concluded that most had serious irregularities. Some were mapped with abandoned mines so they were improperly granted as prospecting permits in the first place. Others had inadequate showings of a valuable mineral and should be rejected because there are no commercial quantities of coal present.

If this is true, and it is BLM's responsibility to find out if it is true, then the PRLAs should be rejected rather than exchanged. I hope you will give this matter your full attention.

Thank you for this opportunity to comment. Again, I apologize for not giving the dEIS the full review it deserves.

Sincerely,

Bruce Hamilton

Bruce Hamilton

*Not blind opposition to progress, but opposition to blind progress

RESPONSE TO LETTER NUMBER 30

30-1 It was the determination of the U.S. Geological Survey that the Savery project area was not within a known coal leasing area and the determination of the Minerals Management Service that the initial showing was adequate.

31

ROCKY MOUNTAIN ENERGY

Ref: ESD/TC/82/32

November 12, 1982

Mr. David Walters
District Manager
Rawlins District
Bureau of Land Management
P. O. Box 670
Rawlins, Wyoming 82301

Dear Mr. Walters:

Rocky Mountain Energy Company (RME) has reviewed the Savery Coal Draft Environmental Impact Statement and prepared several brief comments for your consideration. We concur with a number of points brought out by the Bureau in support of the preferred alternative, particularly in the areas of socioeconomic impact and consistency with the 1982 Divide Resource Area land use decisions.

Our primary interests, as identified in the attached narrative, involve the Bureau's assessment of coal market conditions. We would appreciate an opportunity to discuss our comments with you and your staff. Please suggest a time that is convenient to you. I hope that our comments and the enclosed information are helpful in the completion of your analysis. If you have any questions, please don't hesitate to contact me.

Sincerely,

David E. Preston
Manager
Environmental Services
Department

Enclosures
cc: K. R. Oldham
J. W. Shaw
J. A. Lang
S. E. Berg-Hansen

ROCKY MOUNTAIN ENERGY COMPANY COMMENTS -
SAVERY COAL ORAFT ENVIRONMENTAL IMPACT STATEMENT

Rocky Mountain Energy Company (RME) has completed a review of the Savery Coal DEIS. As identified in the following analysis, our chief concerns involve the Bureau of Land Management's (Bureau) assessment of coal market conditions and projections of coal marketability through the year 2000.

RME's comments are directed toward the Bureau's statements in the coal markets discussion concerning projected demand for southern Wyoming coal and the impact of the development of Savery on other existing and proposed mines in the region. RME is credited with the statement that the "demand for coal (from southern Wyoming) is not expected to significantly increase until some time after the year 2000." Taken by itself, this statement is very misleading.

The future rate of growth in demand for southern Wyoming coal is not expected to be as high as it was during the 1970's, especially over the next few years. Given the current state of the economy, and low projections for energy and electricity demand growth, it is very likely that southern Wyoming coal demand will increase by only 6 million or 7 million tons between now and 1990. However, RME does anticipate substantial increases in demand from this region before the year 2000. RME's forecast for southern Wyoming

RESPONSE TO LETTER NUMBER 31

31-1 The discussion in the final EIS has been revised.

coal demand, which is based on published forecasts from the nationally recognized ICF, Inc. coal model, as well as on our knowledge of the marketplace, estimates that demand will increase from 26 million tons in 1980 to 43 million tons by 1995.

Our forecast assumes that southern Wyoming coals will be competitive in serving several coal markets. These include the Pacific Rim export market, the new power plant market in the Western states, and the existing power plant and industrial markets in the Midwest. Demand for southern Wyoming coal could be enhanced by changes in the Clean Air Act, such as "acid rain" legislation, which would require increased use of high quality, low sulfur coals in the Midwest, or by factors which cause overall coal demand to increase, such as dramatic oil and gas price increases or rapid electricity demand growth.

In serving the identified markets for southern Wyoming coals, it is correct, as stated in the EIS, that the Savery project will compete with existing mines and future federal leases in the region. It will also compete with coals available from Colorado, Utah, and other Western coal regions. However, the diverse markets which can be served by southern Wyoming coals will require coals of many different types and qualities. Because this is true, the development of Savery would not necessarily preclude the development of other new mines in Carbon County or

31-1

31-1

other parts of southern Wyoming, contrary to the prediction of the EIS.

It is not known whether the quality characteristics of the Savery coal will be desired by customers or whether the project's mining costs will allow it to compete against alternative coals. Thus, while it is not certain that the Savery project will be demanded in the market, RME remains convinced that to promote competition, a variety of coal tracts should be leased. Customers will then have the opportunity to select the "best" coal to meet their needs.

32

NATIONAL WILDLIFE FEDERATION

NATURAL RESOURCE CLINIC
FLEMING LAW BUILDING
BOULDER, COLORADO 80309
303/492-8552

ROBERT J. GOLTEN
COUNSEL

FRANCES M. GREEN
COUNSEL

15 November 1982

Gene Kolkman, Team Leader
Bureau of Land Management
P.O. Box 670
1300 Third Street
Rawlins, WY 82301

Re: 1792 (931)
Savery Project.

Dear Mr. Kolkman:

The following comments to the above-reference project are submitted by and on behalf of the Wyoming Wildlife Federation (WWF) and the National Wildlife Federation (NWF).

The NWF is a private conservation organization with over 4.5 million members and supporters nationwide, 3,000 of whom reside in Wyoming. The WWF, a state affiliate of NWF, has approximately 1,500 members in the State. Both organizations have an interest in the wise management of the nation's natural resources, and in the protection of wildlife species important to the nation and the State of Wyoming.

1. Approval of BLM's Preferred Alternative.

We support the BLM's choice of the "no development" alternative as its preferred alternative. We are in accord with the BLM's conclusion that development of the Savery PRLAs risks "significant unmitigatable wildlife impacts," due in major part to the influx of large numbers of people associated with mining development. Other significant and perhaps irremediable impacts include lowering of water tables from a decrease in the quantity of groundwater recharge, reduction of stream flow quantity and quality, and increasing danger of downstream damage from flooding. Under the circumstances, the Savery PRLAs clearly should not be developed.

2. Approval of BLM's Exchange Solution.

We support the concept of an "exchange" agreement for the Savery PRLAs between the BLM and Gulf Oil Corporation. Any potential "exchange" lands must, of course, be subjected to environmental analysis, with public input, in order to ensure that the exchange lands will be suitable for development. For example, an exchange

entitling the applicant to conduct coal mining activities 50 miles north, on Red Rim, would clearly be unacceptable because of the threat to pronghorn critical winter range.

3. Economic Production of Commercial Quantities of Coal.

It is our position that any determination that commercial quantities of coal could be economically produced on the Savery area must take into account the cost of mitigation measures. Before this determination can be made, mitigation requirements and cost estimates are needed. The DEIS, however, does not contain specific mitigation measures and estimates of their costs. For example, habitat recovery and replacement plans are left for future development "in consultation with BLM, USFWS, the Colorado Division of Wildlife, and the Wyoming Game and Fish Department" (DEIS, p. 36) and no mitigation measures appear regarding water resources other than the command that the "Wyoming State Engineer and water right permittees would have to be consultated for...implementation of mitigation measures... ." (DEIS, p. 37). In addition, the BLM has taken the position that it has no authority to require mitigation of socio-economic impacts through lease stipulations. This is contrary to the court's decision in NRDC v. Berklund, 458 F.Supp. 925 (D.D.C.), aff'd, 609 F.2d 558-59 (D.C. Cir. 1979). BLM can require mitigation of socio-economic impacts and the costs of that mitigation must be taken into account in determining whether the applicant has made a satisfactory commercial quantities showing. In sum, before BLM can made a commercial quantities decision, it must know what mitigation measures will be necessary and how much they will cost. The DEIS does not provide this information.

32-1

Thank you for extending the invitation for comments. Your response to these issues in the final EIS is appreciated.

Sincerely yours,

Howard Geduldig
Legal Intern

cc: Tom Dougherty
Rick Heimann
Laura King

RESPONSE TO LETTER NUMBER 32

32-1 Mitigation measures have been added to the final EIS. The costs of these mitigation measures will be developed by the applicant in the final showing. These costs will be a factor in determining the applicant's entitlement to a coal lease. See Natural Resource Defense Council response, number 23.

33

UNIVERSITY OF DENVER
An Independent University
200 West 14th Avenue, Denver, Colorado 80204

College of Law

November 15, 1982

Maxwell T. Lieurance
State Director
Wyoming State Office
U.S. Bureau of Land Management
P.O. Box 1828
Cheyenne, Wyoming 82001

Gene Kolkman
Team Leader
U.S. Bureau of Land Management
P.O. Box 670
1300 Third Street
Rawlins, Wyoming 82301

Subject: Draft Environmental Impact Statement: Savery Project Preference Right Coal Lease Applications, Carbon County, State of Wyoming, Moffat and Routt Counties, State of Colorado (1982)

Your Ref.: 1792 (931)
Savery Project

Gentlemen:

I appreciate the opportunity to submit these comments on the Savery DEIS on behalf of the Colorado Open Space Council. We are grateful for Mr. Kolkman's assurance that they will be considered and placed in the administrative record if postmarked by November 15, 1982. This comment deals with the important legal issues raised by the DEIS. Detailed comments prepared by the COSC Mining Workshop staff are also enclosed.

The BLM is to be highly commended for its accurate assessment of negative impacts in this DEIS and its forthright recommendation of the no-development alternative. The DEIS correctly concludes that the granting of these preference right leases applications (PRLAs) would have very significant and costly impacts on socio-economic conditions both in and outside this two-state area (including community services, housing, medical care, education, and economic dislocations) (DEIS pages i, 9, 15, 17-25), on wildlife (i, 9, 15, 26-37), on water resources (15, 37-42), on transportation (i, 14, 42-43), and other important values (15). This record fully supports the DEIS recommendation of the no-development alternative.

Lease Conditioning - The DEIS

33-1 Despite these strong points, however, the DEIS is fatally defective in its treatment of lease conditions or stipulations essential to mitigate these

THE UNIVERSITY OF DENVER IS AN AFFIRMATIVE ACTION INSTITUTION

BLM Savery Project DEIS - 2

33-1 impacts. Adequate lease conditions, adequately analyzed in an EIS, are essential for two reasons (as the DEIS itself recognizes): (1) because stringent lease conditions will be a significant and essential factor in the determination whether "commercial quantities" of coal exist sufficient for the PRLAs to be granted (DEIS page 1) and (2) because, if the PRLAs are granted, there is no firm assurance that exchanges or other no-development alternatives will succeed and this EIS must therefore cover the full development possibility (9, 14).

While recognizing that very significant environmental, socio-economic, wildlife, water resource, transportation, and other impacts will occur with development, and while recognizing that

> the principal purpose of this EIS is to develop stipulations and mitigation requirements that the applicant must consider

(DEIS page 14), the document wholly fails to do so. No conditions are analyzed or recommended for the socio-economic impacts (17-25), for water resource impacts (37-42), or for transportation (42-43). Only the most minimal conditions are analyzed or recommended for wildlife impacts, and these are arbitrarily limited to the federal leased lands alone (35-36).

33-1 These wholesale omissions appear based on two erroneous assumptions in the DEIS:

- "BLM would have no authority to stipulate through a coal lease" to mitigate impacts which "result from human population influxes and community growth" (15);

- "BLM's ability to mitigate impacts would be limited" solely to federal lands leased and does not extend to off-site impacts (1, 15, 35).

Each of these assumptions is flatly contrary to the law and renders this DEIS vulnerable to legal attack under the Mineral Leasing Act, 30 U.S.C. §§ 181 et seq.; the National Environmental Policy Act, 43 U.S.C. §§ 4321 et seq.; the Surface Mining Control and Reclamation Act, 30 U.S.C. §§ 1201 et seq.; the Federal Land Policy and Management Act, 43 U.S.C. §§ 1701 et seq.; and other statutory, regulatory, and judicial authorities.

Lease Conditioning - The Law

Contrary to the assumptions in the DEIS, the Secretary of the Interior and BLM have extremely broad authority to condition resource leases to protect environmental, social, and economic values, both on- and off-site. The authority is firmly based on a broad range of U.S. Constitutional and statutory provisions, judicial decisions, and Interior regulations, policy pronouncements, Solicitor's Office opinions, and practice. Moreover, Interior has an affirmative, court-enforceable duty to develop and require such protective conditions at a level sufficient to protect the "public welfare."

RESPONSE TO LETTER NUMBER 33

33-1 We regret our error. See changes in the Economic and Hydrology sections of the final EIS and Natural Resource Defense Council response, number 23.

I recently conducted a study of this issue under contract to the State of Colorado, Department of Natural Resources. Because of its national significance, the study was published by the American Bar Association in its journal, Natural Resources Lawyer. I am attaching a copy of that article for your consideration and for the record. Its detail makes unnecessary extensive discussion in this letter, except to comment on its specific application to PRLAs.

The Secretary's broad lease-conditioning powers are not diminished one whit because the lease in question is a "preference right lease," under former 30 U.S.C. §§ 201(b) (1975; amended 1976). The leading case of Natural Resources Defense Council v. Berklund, 609 F.2d 553 (D.C. Cir. 1979), in which I represented the Environmental Defense Fund, ruled that the Secretary has no discretion to reject PRLAs when an applicant has otherwise fulfilled the requirements of the law (including a final showing of "commercial quantities") 609 F.2d at 555; compare DEIS page 14. However, the opinion went to great lengths to show that this lack of discretion in no way applied to or diminished the Secretary's authority to place "stringent" conditions in preference right leases:

> Those costs can include the costs of complying with lease terms demanding complete reclamation and safeguards against environmental harm. . . . Even after a lease is granted the awardee may be precluded from harming the environment if the agency disapproves his mining plan. . . . [T]hese costs can be figured into the assessment of commercial quantities, covered in stringent lease provisions, or adopted as criteria for measuring proposed mining plans. If the Secretary fails to exercise his authority through such measures, than a challenge under NEPA may be appropriate.

609 F.2d 558-55 (emphasis added; footnotes omitted).

Our companion case of Natural Resources Defense Council v. Hughes, 454 F. Supp. 148 (D.D.C. 1978), confirmed the same rule:

> Again, whether the preference right lease applicant has a vested right to a lease, the Secretary has the discretion under the Mineral Leasing Act to choose the terms for issuance of such a lease. . . .
>
> The Secretary also has the discretion to select the time to issue a preference right lease, to lease only part of the land covered by a prospecting permit and to set lease terms. . . .

454 F. Supp. at 154. Recent U.S. District court cases in both Colorado and Utah hold exactly the same. Utah International, Inc. v. Andrus, 488 F. Supp. 962, 966 (D. Ut. 1979) clearly holds that the broad "public welfare" protection powers of 30 U.S.C. § 187 and NEPA fully apply to PRL conditioning.

Accord, Utah International, Inc. v. Andrus, 488 F. Supp. 976, 987 (D. Colo. 1980).

Finally, you will note that the DEIS's assumptions and omissions are in direct conflict with the Department of Interior's own authorities, including the Final EIS for the Federal Coal Management Program, Solicitor's Office opinions, and present lease terms (e.g., Energy Fuels C-29220 and the Final EIS for the Rojo Caballos Mine, also in Wyoming). For details on these authorities, see the attached Natural Resources Lawyer article, specifically pages 314-19, and generally throughout pages 319-35.

Conclusion

33-1 These errors in interpreting the law, in failing to develop necessary impact-mitigating conditions, as well as the other technical problems addressed in the CDSC Mining Workshop comments render the DEIS inadequate under the law. Moreover, it places the Administration in a very poor public policy light, appearing to announce a reversal in the national policy for the Federal Coal Management Program to be a "good neighbor" by planning for and requiring constructive measures to mitigate its own impacts on the affected states, local governments, and the public.

We recommend you withdraw this draft EIS and undertake its thorough reconsideration on these critical issues. Thank you for your consideration.

Sincerely,

George W. Pring
Professor of Law

GP/ss

34a

colorado open space council

2239 E. Colfax Ave. Denver, CO 80206 393-0466

November 15, 1982

Gene Kolkmeo, Team Leader
U. S. Bureau of Land Management
P.O. Box 670
1300 Third Street
Rawlins, WY 82301

Dear Mr. Kolkmeo:

Enclosed are two sets of comments submitted on the Savery Project DEIS by the Colorado Open Space Council (COSC). Comments prepared by Professor Pring, our legal counsel deal with the Bureau's authority and duty to condition leases with special stipulations. The detailed comments were prepared by members of the COSC Mining Project and by me. If you or other members of your staff have any questions, don't hesitate to contact the Mining Project at 303/321-6588.

I appreciated the time spent by you and members of your staff discussing with me various issues concerning the draft EIS. Again, if there is anything I can do for the EIS Team just give me a call.

Sincerely,

Mark Welsh

Mark Welsh
COSC Mining Project

Enclosures

cc: Maxwell T. Lieurance, State Director

"Man belongs to earth, not earth to man"

34b

colorado open space council

2239 E. Colfax Ave. Denver, CO 80206 393-0466

November 15, 1982

Gene Kolkmeo, Team Leader
U. S. Bureau of Land Management
P.O. Box 670
1300 Third Street
Rawlins, WY 82301

Dear Mr. Kolkmeo:

Subject: Draft Environmental Impact Statement: Savery Project Prefereence Right Coal Lease Applications, Carbon County, State of Wyoming, Moffat and Routt Counties, State of Colorado, 1982

These comments are submitted by the Colorado Open Space Council, Inc. (COSC), a Colorado-based conservation organization composed of over 45 affiliate organizations and approximately 1200 individual members. COSC has a long-standing interest in federal coal issues including the leasing program, land-use planning, the permitting of mines by OSM and state regulatory authorities, impacts on agriculture, water resources (and associated water rights) and the responsibility of the Department and the BLM to mitigate impacts by conditioning leases with special stipulations.

We appreciate the opportunity to submit these comments in response to the State Director's notice and your phone conversation of November 11, 1982, with the COSC Mining Project Staff. In this conversation with Mark Welsh, you assured COSC that our comments will be accepted pursuant to the notice if postmarked by November 15, 1982.

In addition to these comments, Professor George Pring, College of Law, University of Denver is submitting comments which represent our legal position regarding the Bureau's authority to condition leases with special stipulations necessary to mitigate adverse impacts caused by the Savery Project PRLAs.

We fully subscribe to and support his study of this issue which was recently published in the American Bar Association journal, Natural Resources Lawyer. We strongly encourage you to reconsider your position concerning your authority to mitigate impacts, and we anticipate that this issue will be properly resolved in future NEPA documents.

"Man belongs to earth, not earth to man"

RESPONSE TO LETTER NUMBER 34

NO RESPONSE

Thank you for your comment.

34b-1 PRLAs constitute a valid, existing right. This valid existing right is recognized in our planning decisions. In this case, these PRLAs conflict with the preferred sequence of coal development in the planning unit. Final disposition of these PRLAs is dependent on the determination of entitlement to a lease which is based on the applicant's final showing. The land-use conflict along with the environmental consequences developed in this EIS provide the rationale for the selection of the No Development Alternative as the preferred alternative.

34b-2 The alternatives available to BLM are limited. If the applicant fulfills the requirements of the final showing, he is entitled to a coal lease on the area. If this occurs, the only options available are: (1) the company mines the area, or (2) an exchange is negotiated.

If the applicant did not fulfill the requirements of the final showing, then they would not be entitled to a lease on the area and no

We commend the BLM for its accurate assessment of the adverse impacts and its selection of the no development alternative as the preferred decision.

Aside from the legal issue, which we consider to be of extreme importance, there are additional issues which we would like to identify and comment on:

1. Consistency with Land-Use Plans

34b-1 The DEIS states that "the proposed PRLA project conflicts with BLM's land-use decisions" (pg. 9). Because of this, we do not see how the PLRAs are leasable . Land-use plans control and restrict future leasing decisions, and the BLM must follow the objectives of a land-use plan in activity planning (Sorenson and Jones v. BLM, Office of Hearings and Appeals, NEVADA 1-78-2, November 22, 1978).

34b-2 It is difficult to determine if the preferred alternative is consistent with the findings and objectives of the Divide-Overland land-use plans. The DEIS states that the Savery Project area should not be mined for 15 to 20 years. Were any alternatives other than an exchange identified in the land-use plan? Is it proper for a land-use plan to commit the BLM to an exchange or other compensation? If compensation is the approach to be taken, will it be based on past financial commitments by the holder of the PRLAs or the commercial value of the coal? Documentation of the pertinent portions of the land-use plan and answers to these questions should be provided.

2. Wildlife Habitat

34b-3 Loss of wildlife habitat is understated in the DEIS. The transformation of this rural area into a major urban environment will have secondary impacts (i.e., hunting and fishing) on wildlife. Loss of habitat to accommodate increased population must be deferred. The mitigating measures (pp. 35-36) will not mitigate the significant impacts and are not even as strong as stipulations developed by Colorado and BLM (p. 329, Pring paper). The mitigating measures should be expanded to include non-federal lands and coal. Extensive buffer zones and restrictions on all surface use or occupancy of any land (i. e., roads, air ventilation shafts) need to be established for bald eagle nesting and habitat areas and staging and nesting areas for sandhill cranes. The habitat and recovery plan is severely deficient. Critical winter range is not available and responsibility to develop such a plan is completely up in the air.

3. Water Resources

34b-4 The discussion on water resources is extremely vague and contains contradictions. For example, the groundwater section states that mining could impact groundwater recharge while the surface water discussion states no reduction of groundwater is anticipated. Also,

34b-5 the source of sediment loads should be identified since under federal and state laws sediment control would be regulated.

34b-6 Additionally, we do not see how groundwater can be impacted by subsidence, but not surface water. The DEIS provides no information regarding the amount of overburden above the workable coal seams. This would be especially important in order to determine the impact of subsidence on surface and groundwater flows. This is a major issue and should be thoroughly explored and assessed by the BLM.

34b-7 The DEIS states that mining and subsidence could interrupt groundwater recharge near the Savery and Slater Creeks and the Little Snake River. It goes on to state that reduction of stream flows might involve water rights on the affected streams. This conclusionary statement (and others) violates NEPA, and the BLM must provide documentation. An analysis of the effects of subsidence to the surface and water resources is needed. A worst case and probable level of water loss should be included in the analysis.

34b-8 The BLM can then identify and develop methods to protect water and associated water rights. Restrictions on mining under and adjacent to important water areas, the requirement of an adjudicated water replacement plan for the holders of vested water rights and a water insurance policy can be used to mitigate water damages. These mitigating measures should be in the form of lease stipulations which would be carried through into any future permitting process.

4. Socio-Economic Impacts

34b-9 Although the DEIS portrays the impacts on the local communities as massive and unacceptable, there are weaknesses. The BLM should consider:

1. Assessment of the construction workers on Craig and Rawlins

2. Detailed fiscal analysis of the ability of local communities to accommodate anticipated growth

3. Social change resulting from the projected growth

34b-10 The DEIS compared employment levels, income, housing, and school needs and settlement patterns for two levels of production (4 MTY or 7 MTY). It is obvious that the impacts on local communities and their infrastructure is largely determined by production levels and schedules. The DEIS made no attempt to mitigate these impacts which place an unfair burden on local communities. The BLM should consider limiting maximum annual production rates and/or postponement of mining until such time the land-use plan indicates mining would be acceptable. The granting of only certain PRLAs or portions of PRLAs could also be used to mitigate the social impacts as well as those related to wildlife and water resources.

further actions would need to be taken by BLM.

Compensation would be based on the value of the PRLAs, not on the applicant's financial commitments.

We have sent you a copy of the planning brochure for coal in this planning unit.

34b-3 Most of the significant impacts to wildlife are caused by human in-migration to the area. Human settlement patterns cannot be exactly predicted at this time. If such settlement occurs on federal lands, mitigation measures will be included as appropriate. It is more likely that settlement would be on private lands, where land use can be planned and controlled by local jurisdictions.

34b-4 The final EIS has been revised to eliminate this apparent contradiction.

34b-5 The discussion of sediment loads has been revised in the final EIS.

34b-6 The depth to mineable coal seams varies from approximately 200 to 1,000 feet. The coal seams are generally unconformably overlain by more recent sediments. Empirical estimates of subsidence have been added to the final EIS.

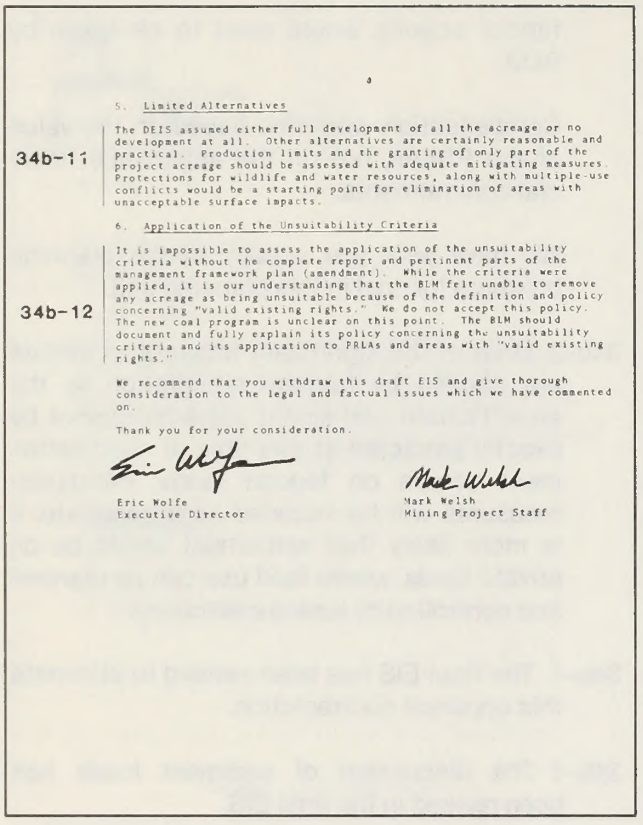
34b-7 No net loss to streamflow is foreseen (see revision of Water Resources section). Temporary or localized changes could occur, depending on presently unknown factors.

34b-8 Some of your suggestions have been added in the Hydrology section and will be included in the lease stipulations.

34b-9 (Item 1) See response 25-1.

(Item 2) The capability of these communities to accommodate anticipated growth is discussed in the Economic section of the final EIS.

(Item 3) Note addition to text entitled Social Conditions in Affected Environment and Environmental Consequences.



5. Limited Alternatives

34b-11 The DEIS assumed either full development of all the acreage or no development at all. Other alternatives are certainly reasonable and practical. Production limits and the granting of only part of the project acreage should be assessed with adequate mitigating measures. Protections for wildlife and water resources, along with multiple-use conflicts would be a starting point for elimination of areas with unacceptable surface impacts.

6. Application of the Unsuitability Criteria

34b-12 It is impossible to assess the application of the unsuitability criteria without the complete report and pertinent parts of the management framework plan (amendment). While the criteria were applied, it is our understanding that the BLM felt unable to remove any acreage as being unsuitable because of the definition and policy concerning "valid existing rights." We do not accept this policy. The new coal program is unclear on this point. The BLM should document and fully explain its policy concerning the unsuitability criteria and its application to PRLAs and areas with "valid existing rights."

We recommend that you withdraw this draft EIS and give thorough consideration to the legal and factual issues which we have commented on.

Thank you for your consideration.

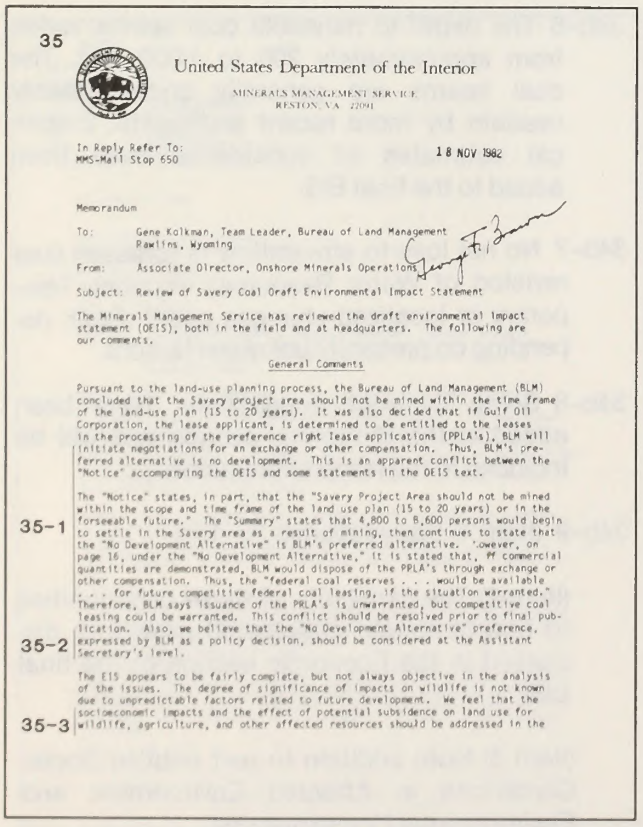
Eric Wolfe
Executive Director

Mark Welsh
Mining Project Staff

34b-10 The coal to be recovered, mining method, and rates of production are identified by the applicant in the final showing. Lease entitlement on all or any part of the PRLAs is based upon the final showing, not land-use planning or this EIS.

34b-11 See response 34b-10.

34b-12 Unsuitability criteria were applied to this area during our recent land-use planning update. No coal was determined to be unsuitable because this is a subsurface mine. Some areas, however, were acceptable for subsurface mining methods with limited or no surface occupancy. These areas and restrictions are reflected in the Wildlife section and will be included as lease stipulations.



35

United States Department of the Interior
MINERALS MANAGEMENT SERVICE
RESTON, VA 22091

In Reply Refer To:
MMS-Mail Stop 650

18 NOV 1982

Memorandum

To: Gene Kolkman, Team Leader, Bureau of Land Management
Rawlins, Wyoming

From: Associate Director, Onshore Minerals Operations

Subject: Review of Savery Coal Draft Environmental Impact Statement

The Minerals Management Service has reviewed the draft environmental impact statement (DEIS), both in the field and at headquarters. The following are our comments.

General Comments

Pursuant to the land-use planning process, the Bureau of Land Management (BLM) concluded that the Savery project area should not be mined within the time frame of the land-use plan (15 to 20 years). It was also decided that if Gulf Oil Corporation, the lease applicant, is determined to be entitled to the leases in the processing of the preference right lease applications (PRLA's), BLM will initiate negotiations for an exchange or other compensation. Thus, BLM's preferred alternative is no development. This is an apparent conflict between the "Notice" accompanying the DEIS and some statements in the DEIS text.

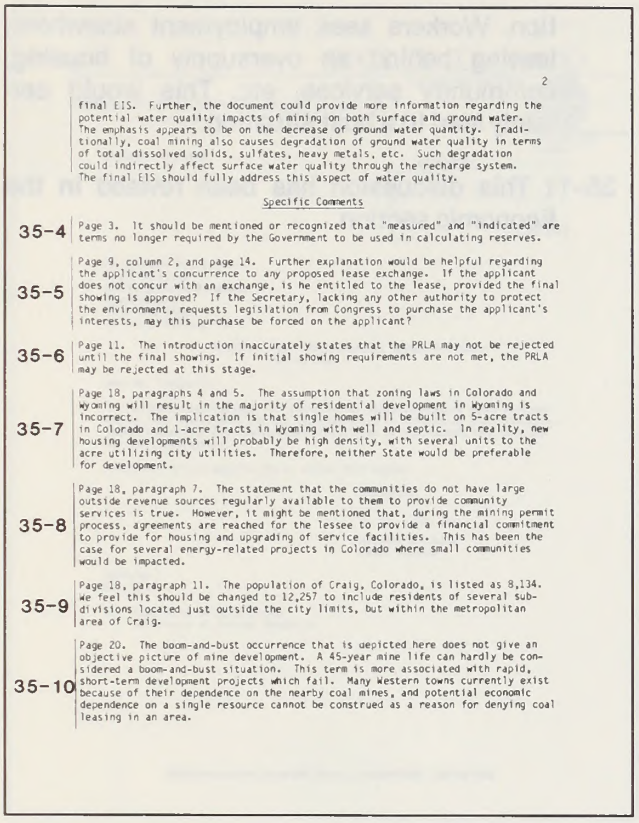
35-1 The "Notice" states, in part, that the "Savery Project Area should not be mined within the scope and time frame of the land use plan (15 to 20 years) or in the forseeable future." The "Summary" states that 4,800 to 8,600 persons would begin to settle in the Savery area as a result of mining, then continues to state that the "No Development Alternative" is BLM's preferred alternative. However, on page 16, under the "No Development Alternative," it is stated that, if commercial quantities are demonstrated, BLM would dispose of the PRLA's through exchange or other compensation. Thus, the "federal coal reserves . . . would be available . . . for future competitive federal coal leasing, if the situation warranted." Therefore, BLM says issuance of the PRLA's is unwarranted, but competitive coal leasing could be warranted. This conflict should be resolved prior to final publication. Also, we believe that the "No Development Alternative" preference, expressed by BLM as a policy decision, should be considered at the Assistant Secretary's level.

35-2

35-3 The EIS appears to be fairly complete, but not always objective in the analysis of the issues. The degree of significance of impacts on wildlife is not known due to unpredictable factors related to future development. We feel that the socioeconomic impacts and the effect of potential subsidence on land use for wildlife, agriculture, and other affected resources should be addressed in the

RESPONSES TO LETTER NUMBER 35

35-1 There is no conflict between these two statements. The planning decision states that the PRLAs should not be developed in the foreseeable future. This means that, based on existing conditions such as the availability of coal elsewhere in the Rawlins District and the existence of other communities dependent on the development of that coal, this is not the right time to mine coal in the Savery area. BLM also recognizes that circumstances change and sometime in the future it may become the right time to mine coal in the Savery area. If the applicant does not receive a lease on the area or an exchange occurs, the coal in the Savery area will still exist. The development of this coal would be considered each time the land-use plan was updated. Some day, circumstances may warrant development of this coal, and under those circumstances the land-use decision would undoubtedly change.



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final EIS. Further, the document could provide more information regarding the potential water quality impacts of mining on both surface and ground water. The emphasis appears to be on the decrease of ground water quantity. Traditionally, coal mining also causes degradation of ground water quality in terms of total dissolved solids, sulfates, heavy metals, etc. Such degradation could indirectly affect surface water quality through the recharge system. The final EIS should fully address this aspect of water quality.

Specific Comments

35-4 Page 3. It should be mentioned or recognized that "measured" and "indicated" are terms no longer required by the Government to be used in calculating reserves.

35-5 Page 9, column 2, and page 14. Further explanation would be helpful regarding the applicant's concurrence to any proposed lease exchange. If the applicant does not concur with an exchange, is he entitled to the lease, provided the final showing is approved? If the Secretary, lacking any other authority to protect the environment, requests legislation from Congress to purchase the applicant's interests, may this purchase be forced on the applicant?

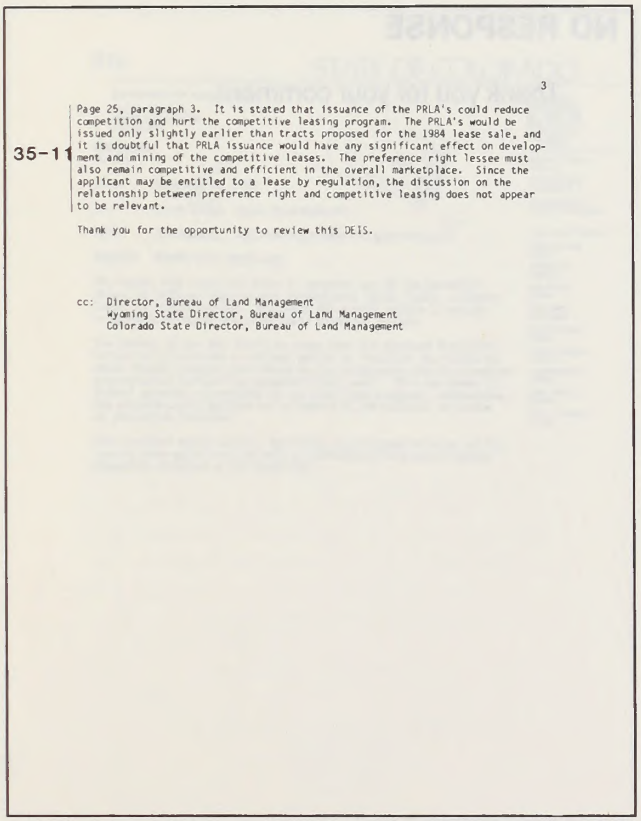
35-6 Page 11. The introduction inaccurately states that the PRLA may not be rejected until the final showing. If initial showing requirements are not met, the PRLA may be rejected at this stage.

35-7 Page 18, paragraphs 4 and 5. The assumption that zoning laws in Colorado and Wyoming will result in the majority of residential development in Wyoming is incorrect. The implication is that single homes will be built on 5-acre tracts in Colorado and 1-acre tracts in Wyoming with well and septic. In reality, new housing developments will probably be high density, with several units to the acre utilizing city utilities. Therefore, neither State would be preferable for development.

35-8 Page 18, paragraph 7. The statement that the communities do not have large outside revenue sources regularly available to them to provide community services is true. However, it might be mentioned that, during the mining permit process, agreements are reached for the lessee to provide a financial commitment to provide for housing and upgrading of service facilities. This has been the case for several energy-related projects in Colorado where small communities would be impacted.

35-9 Page 18, paragraph 11. The population of Craig, Colorado, is listed as 8,134. We feel this should be changed to 12,257 to include residents of several subdivisions located just outside the city limits, but within the metropolitan area of Craig.

35-10 Page 20. The boom-and-bust occurrence that is depicted here does not give an objective picture of mine development. A 45-year mine life can hardly be considered a boom-and-bust situation. This term is more associated with rapid, short-term development projects which fail. Many Western towns currently exist because of their dependence on the nearby coal mines, and potential economic dependence on a single resource cannot be construed as a reason for denying coal leasing in an area.



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35-11 Page 25, paragraph 3. It is stated that issuance of the PRLA's could reduce competition and hurt the competitive leasing program. The PRLA's would be issued only slightly earlier than tracts proposed for the 1984 lease sale, and it is doubtful that PRLA issuance would have any significant effect on development and mining of the competitive leases. The preference right lessee must also remain competitive and efficient in the overall marketplace. Since the applicant may be entitled to a lease by regulation, the discussion on the relationship between preference right and competitive leasing does not appear to be relevant.

Thank you for the opportunity to review this DEIS.

cc: Director, Bureau of Land Management
Wyoming State Director, Bureau of Land Management
Colorado State Director, Bureau of Land Management

35-2 The selection of the No Development Alternative as the preferred alternative occurred in the land-use planning process and is expressed as a land-use planning decision. Entitlement to a lease and issuance of a lease or pursual of exchange will not be made until after the final showing.

35-3 The revision in the final EIS discusses degradation of water quality, subsidence, and other affected resources.

35-4 It is recognized that measured or indicated are terms no longer required by the government for use in calculating reserves. We have used these terms in the EIS since this is the way that the information is presented in the initial showing submitted by the applicant and is used as the basis for this analysis.

35-5 If the applicant is entitled to a coal lease and does not agree to an exchange, he will receive a lease. If the Secretary requested special legislation from Congress and Congress provided that legislation, a purchase could be forced on the applicant (i.e., condemnation).

35-6 You are right, we stand corrected.

35-7 Our statement concerning Wyoming zoning laws in the EIS was erroneous. From comments received during this review, we have changed this statement. Please note this change in the Economic section.

35-8 Agreed, and our Mitigation Measures section now reflects this concern.

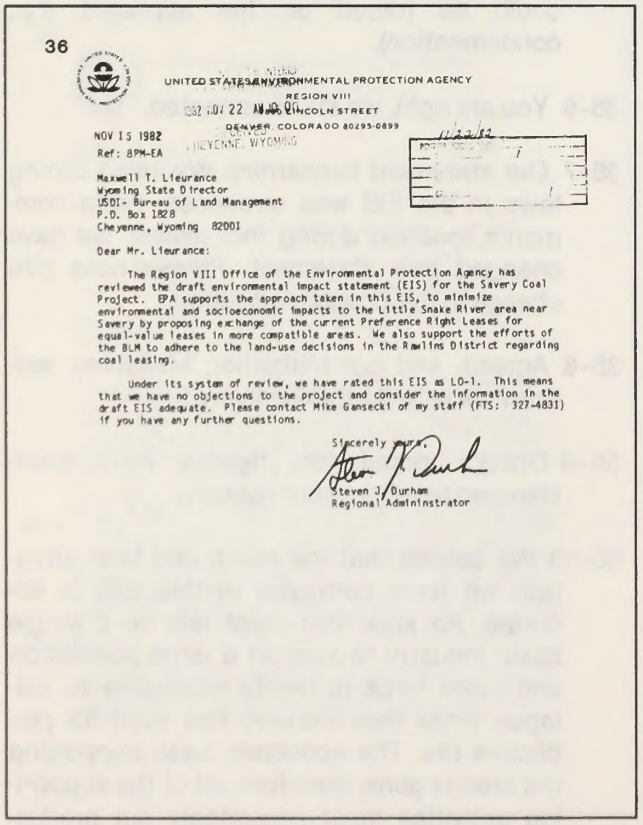
35-9 Craig's population figures have been changed to reflect your concern.

35-10 We believe that the boom and bust situation we have portrayed in this EIS is accurate. An area that must rely on a single basic industry to support a large population and labor force is highly vulnerable to collapse when that industry has lived its productive life. The economic base supporting the area is gone; therefore, all of the supporting activities must necessarily cut produc-

tion. Workers seek employment elsewhere, leaving behind an oversupply of housing, community services, etc. This would certainly lead to a bust situation.

35-11 This discussion has been revised in the Economic section.

36



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION VIII
1860 LINCOLN STREET
DENVER, COLORADO 80295-0899

NOV 15 1982
Ref: 8PM-EA

Maxwell T. Lieurance
Wyoming State Director
USDI - Bureau of Land Management
P.O. Box 1828
Cheyenne, Wyoming 82001

Dear Mr. Lieurance:

The Region VIII Office of the Environmental Protection Agency has reviewed the draft environmental impact statement (EIS) for the Savery Coal Project. EPA supports the approach taken in this EIS, to minimize environmental and socioeconomic impacts to the Little Snake River area near Savery by proposing exchange of the current Preference Right Leases for equal-value leases in more compatible areas. We also support the efforts of the BLM to adhere to the land-use decisions in the Rawlins District regarding coal leasing.

Under its system of review, we have rated this EIS as LO-1. This means that we have no objections to the project and consider the information in the draft EIS adequate. Please contact Mike Ganseckí of my staff (FTS: 327-4831) if you have any further questions.

Sincerely yours,

Steven J. Durham
Regional Administrator

NO RESPONSE

Thank you for your comment.

37a

STATE OF COLORADO

Department of Local Affairs

DIVISION OF LOCAL GOVERNMENT

Pat Ratliff, Director

Richard D. Lamm
Governor

December 21, 1982

12/22/82

Mr. Maxwell T. Lieurance
State Director
Bureau of Land Management
State Office
P. O. Box 1828
Cheyenne, Wyoming 82001

SUBJECT: Draft Environmental Impact Statement
Savery Coal

Dear Mr. Lieurance:

The Colorado Clearinghouse has received the above-referenced draft Environmental Impact Statement and has distributed it to interested state agencies. Comments received from the Colorado Department of Agriculture are enclosed for your information.

Thank you for the opportunity to review this matter.

Sincerely,

Stephen O. Ellis
Chief Planner

SE/PN/vr
Enclosure

cc: Department of Agriculture
Department of Natural Resources

1313 Sherman Street, Room 520, Denver, Colorado 80203 (303) 866-2156

37b

STATE OF COLORADO

DEPARTMENT OF AGRICULTURE
1525 Sherman Street
Denver, Colorado 80203
(303) 866-2811

Richard D. Lamm, Governor
J. Evan Goulding, Commissioner
Donald Svedman, Deputy Commissioner

Agricultural Commission
Naioma Benson, Sterling
Ben Eastman, Hotchkiss
John Malloy, Denver
Elton Miller, Fort Lupton
Don Moschetti, Center
William Stephens, Ceptaum
William Webster, Greeley
Clede Widener, Granada
Kenneth Wilmore, Denver

MEMORANDUM
82-379

DATE: December 10, 1982

TO: Steve Ellis, State Clearinghouse

FROM: Jim Rubingh, Colorado Department of Agriculture

SUBJECT: SAVERY COAL DRAFT EIS

The Savery Coal Draft EIS fails to consider any of the potential direct or indirect impacts upon agricultural lands, water, activity, labor, or infrastructure. The Final EIS should include a section on agriculture which evaluates these potential impacts.

The authors of the EIS should be aware that the Farmland Protection Policy Act establishes a national policy to "minimize the extent to which Federal programs contribute to the unnecessary and irreversible conversion of farmland to nonagricultural uses." This Act makes all federal agencies responsible to see that their programs, authorities, and administrative actions are in line with the national objective of protecting farmlands.

This proposed action should, therefore, be evaluated in terms of its impacts upon agriculture as well as wildlife and the other factors presently contained in the Draft EIS.

RESPONSE TO LETTER NUMBER 37

NO RESPONSE

Thank you for your comment.

37b-1 A section on agricultural impacts has been added to the Economic section.

38

STATE OF COLORADO RICHARD D. LAMM, Governor

DEPARTMENT OF NATURAL RESOURCES

D. MONTE PASCOE, Executive Director
1313 Sherman St., Room 718, Denver, Colorado 80203 866-3311

Geological Survey
Board of Land Commissioners
Mined Land Reclamation
Division of Mines
Oil and Gas Conservation Commission
Division of Parks & Outdoor Recreation
Soil Conservation Board
Water Conservation Board
Division of Water Resources
Division of Wildlife

December 20, 1982

12/27/82

Mr. Maxwell T. Lieurance
State Director
U. S. Department of the Interior
Bureau of Land Management
State Office
Post Office Box 1828
Cheyenne, Wyoming 82001

Dear Mr. Lieurance:

We appreciate the opportunity to comment on the Draft Environmental Impact Statement on the Savery Preference Right Leases. This is an exceptionally clear EIS. Combining the "affected environment", "environmental consequences", and other sections for each resource makes the EIS much easier to read.

38-1 The DEIS lacks any analysis of air quality impacts, but for other resources, it presents a balanced and accurate analysis. Development of these PRLA's would bring urban development to the Little Snake Valley, which would require extensive investments in housing and urban facilities, and it would also diversify the economic base of the area. Eventually, the coal reserves in this valley may be developed. However, in view of the lack of supporting facilities in the area, the availability of mineable resources closer to population centers and railroads, and the environmental problems of the PRLA's, we support the BLM's preferred alternative of exchanging the PRLA for bidding rights or for another lease.

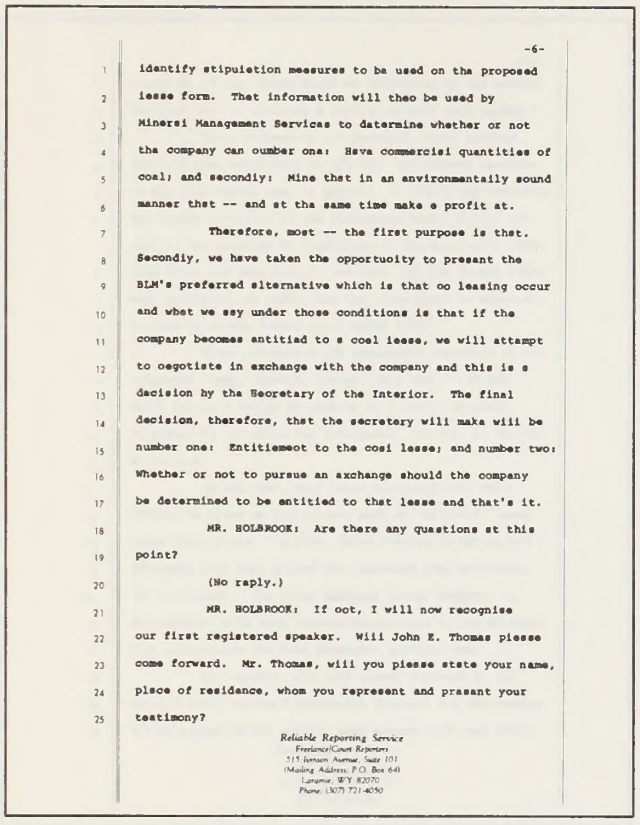
Sincerely yours,

D. Monte Pascoe
Executive Director

DMP:bck

RESPONSE TO LETTER NUMBER 38

38-1 Air quality would not be significantly impacted because of the underground mining method and limited surface disturbance associated with this project.



-6-

identify stipulation measures to be used on the proposed lease form. That information will then be used by Mineral Management Services to determine whether or not the company can number one: Have commercial quantities of coal; and secondly: Mine that in an environmentally sound manner that -- and at the same time make a profit at.

Therefore, most -- the first purpose is that. Secondly, we have taken the opportunity to present the BLM's preferred alternative which is that no leasing occur and what we say under those conditions is that if the company becomes entitled to a coal lease, we will attempt to negotiate in exchange with the company and this is a decision by the Secretary of the Interior. The final decision, therefore, that the secretary will make will be number one: Entitlement to the coal lease; and number two: Whether or not to pursue an exchange should the company be determined to be entitled to that lease and that's it.

MR. HOLBROOK: Are there any questions at this point?

(No reply.)

MR. HOLBROOK: If not, I will now recognize our first registered speaker. Will John E. Thomas please come forward. Mr. Thomas, will you please state your name, place of residence, whom you represent and present your testimony?

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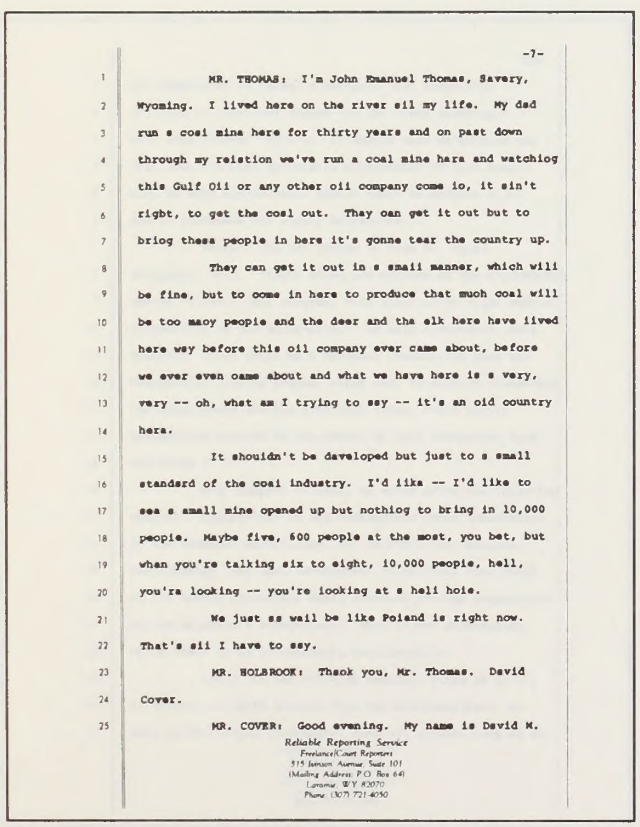

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MR. THOMAS: I'm John Emanuel Thomas, Savery, Wyoming. I lived here on the river all my life. My dad run a coal mine here for thirty years and on past down through my relation we've run a coal mine here and watching this Gulf Oil or any other oil company come in, it ain't right, to get the coal out. They can get it out but to bring these people in here it's gonna tear the country up.

They can get it out in a small manner, which will be fine, but to come in here to produce that much coal will be too many people and the deer and the elk here have lived here way before this oil company ever came about, before we ever even came about and what we have here is a very, very -- oh, what am I trying to say -- it's an old country here.

It shouldn't be developed but just to a small standard of the coal industry. I'd like -- I'd like to see a small mine opened up but nothing to bring in 10,000 people. Maybe five, 600 people at the most, you bet, but when you're talking six to eight, 10,000 people, hell, you're looking -- you're looking at a hell hole.

We just as well be like Poland is right now. That's all I have to say.

MR. HOLBROOK: Thank you, Mr. Thomas. David Cover.

MR. COVER: Good evening. My name is David M.

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PUBLIC HEARINGS

Public hearings were held in Baggs, Wyoming on October 20 and November 8, 1982. Hearings were also held in Rawlins, Wyoming on October 21 and November 10, 1982. Transcripts of these hearings are reprinted as a part of this EIS. Those appearing at these hearings are listed below. Oral comments on the draft EIS are noted in the transcripts, along with responses to these comments. All comments received were considered in developing this final EIS.

Appearances

John E. Thomas, Savery, Wyoming
David Cover, Gulf Oil Corporation
Katherine Morehead, Wyoming Outdoor Council
Frank Alguire, Carbon County Economic Development Committee
Linda Fleming, Mayor of Baggs
Steve Adams, Little Snake River Soil Conservation District
George Salisbury, Savery area rancher
Sally Smith, Savery, Wyoming
Elaine Raper, Wyoming Game and Fish Department
Barbara Parsons, Carbon County School District #1

Cover and I am here on behalf of Gulf Oil Corporation and its wholly owned subsidiary, the Pittsburgh and Midway Coal Mining Company, to express our comments on the draft Environmental Impact Statement on the Savery Project. By way of background, Gulf acquired the Savery Preference Right Lease Applications when it acquired the Kemmerer Coal Company in 1981. These applications have been pending since 1970.

Kemmerer had filed these applications after the successful completion of its exploration program under the authority of the precedent coal prospecting permits. Despite rules and regulations which have changed since the filing of the application, we have demonstrated the existence of commercial quantities of coal under the lands covered by these applications. Gulf regards the Savery PRLAs as a significant property right which contains a commercially developable energy resource. Gulf will demonstrate the economic viability of mining the Savery PRLAs at the final showing.

Gulf also recognizes concerns of the Bureau of Land Management in this area, as expressed in the EIS in the "No development alternative." While we do not agree with many points contained in the EIS, Gulf is willing to discuss exchange possibilities consistent with our long term goals and objectives. Gulf appreciates this opportunity

to offer comments on the draft EIS.

We will be submitting more detailed written comments for the record prior to the November 15, 1982 deadline for submission of comments. Our comments this evening will be summary in nature and touch only some of the highlights for our perspective.

First: On Page 16 of the Environmental Impact Statement under Proposed Development Alternatives, the EIS states that, "The mining method proposed in the area probably would recover about 50% of the in-place coal reserves for a maximum recovery of approximately 229 million tons of coal. This recovery rate is typical of room and pillar type underground mining."

The Gulf mine plan which will be submitted at the final showing will probably use a combination of room and pillar and a more technologically sophisticated technique, such as a longwall mining. This will result in a much higher recovery rate of the coal reserves. The EIS should not be limited to room and pillar mining, it should address longwall mining as well as other forms of underground mining.

Second: The EIS states on Page 24 that, "Any coal leased and developed in South-Central Wyoming and Northwestern Colorado would directly impact potential coal development elsewhere in the region," and that, "the

magnitude of the impact would be influenced by the demand for coal and the industry's ability to meet that demand."

These statements are generally true, however, they are also applicable to all coal development projects in any coal region and, in general, to almost any commodity. Gulf takes exception to the statements that, "Demand for coal is not expected to significantly increase until sometime after the year 2000." And that, "If the Savery PRLAs were developed, no additional new mines would be expected to open in Carbon County until after 2000."

These statements are apparently supported by the reference "Rocky Mountain Energy, July 1982." If the Rocky Mountain Energy projection is a public document, it should be listed in the references. If not, it should be deleted.

In any case, Gulf would recommend that this section be based on projections made by nationally recognized forecasters. In fact, these nationally recognized forecasts will show a need for increased coal production for the region. The Rocky Mountain Energy scenario is inconsistent with such notable forecasters as the National Coal Association and Data Resources Incorporated.

For example, the 1982 summer forecast by DRI shows a total regional production increase for the western United States of 579 million tons between 1982 and 2000.

The Department of Energy's National Coal model also predicts an increased demand for the Green River-Hams Fork coal region. Finally, it should also be pointed out that even the most optimistic projections of coal demand will be very conservative should there be another major and/or permanent oil supply disruption.

Three: The EIS states on Page 25, third paragraph, that: "Since PRLAs are outside of the competitive aspect of BLM's coal program, this alternative could reduce competition in the marketplace. If this alternative were accepted, there would be a distinct possibility that the competitive leasing tracts, which were determined acceptable for development for the 1984 coal lease, would remain undeveloped because of the amount of coal production from the PRLAs."

With respect to this, we would offer the following comment: Competition in the marketplace means competition in the economic marketplace, not in BLM's coal program. Consequently, any coal development which would take place on the Savery properties would increase overall competition in the consumer's marketplace. This is the marketplace which needs to be of paramount consideration.

Four: On the Wildlife section, Pages 26 to 37, in general we would comment that our own experience, as well as the latest literature, does not support many of the

conclusions and recommendations reached in this section. For example, Page 30, paragraph 6, discusses the importance of the strutting grounds of the sage and sharp-tailed grouse to their reproduction process. Recently, studies suggest that a voluntary interlek movement by the birds creates a self-mitigating situation. We will offer more detailed comments on this section in our written submission.

Fifth: PRLA serial number W-0324037 is listed in Table 2 on Page 3 of the EIS as having no coal reserves. As a result of previous discussions with the Minerals Management Service, we have withdrawn this application.

In conclusion, we think that overall the EIS represents a significant analysis of the issues involved in this area. We appreciate the opportunity to make these comments and to move to a speedy resolution of the property rights which have been held in question since 1970. Thank you.

MR. HOLBROOK: Thank you, Mr. Cover. Katherine Morehead.

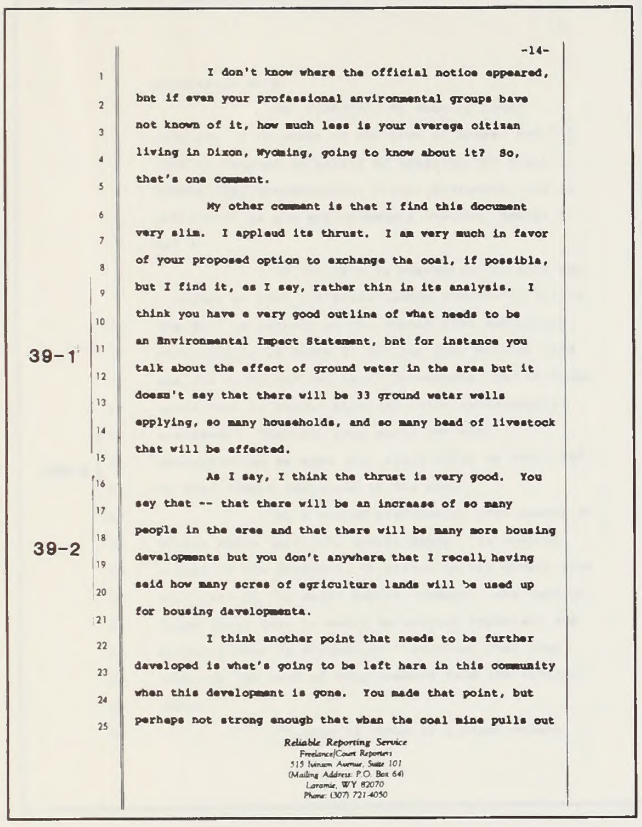
MS. MOREHEAD: My name is Katharine Morehead and I'm a resident of Savery, Wyoming. I am representing myself as an individual and also representing the Wyoming Outdoor Council this evening. I would like to address this document very briefly and the process by which these hearings were held, also I expect to be making more detailed

comments before the 15th in writing.

I find the process by which we arrived here tonight very disappointing. I think a level of sophistication on the part of the public has been assumed by the Bureau of Land Management that is not true. I know you folks have held scoping meetings and information meetings and so forth down here, but I don't think the public is really aware of the importance of this document that is the basis of your decision making process and that this is a very important step.

Now, I don't know what more you could have done to have gotten this in the hands of the public, but I called this afternoon, after I had talked to Mr. Kolkman, I called probably 30 or 35 people of whom two had seen this document. It is not in the hands of the public. They don't know what's in it. They don't know how important it is.

I'm hoping that sometime before the 9th and 11th, 10th, when you have those other hearings, that this document can be more widely circulated and the implications of it made more widely known to the public. I spoke to the director of the Wyoming Council this afternoon and he had been in contact with the Wyoming Wildlife Federation. Neither of those organizations had received any official notice of this meeting.



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I don't know where the official notice appeared, but if even your professional environmental groups have not known of it, how much less is your average citizen living in Dixon, Wyoming, going to know about it? So, that's one comment.

My other comment is that I find this document very slim. I applaud its thrust. I am very much in favor of your proposed option to exchange the coal, if possible, but I find it, as I say, rather thin in its analysis. I think you have a very good outline of what needs to be an Environmental Impact Statement, but for instance you talk about the effect of ground water in the area but it doesn't say that there will be 33 ground water wells applying, so many households, and so many head of livestock that will be affected. 39-1

As I say, I think the thrust is very good. You say that -- that there will be an increase of so many people in the area and that there will be many more housing developments but you don't anywhere that I recall, having said how many acres of agriculture lands will be used up for housing developments. 39-2

I think another point that needs to be further developed is what's going to be left here in this community when this development is gone. You made that point, but perhaps not strong enough that when the coal mine pulls out

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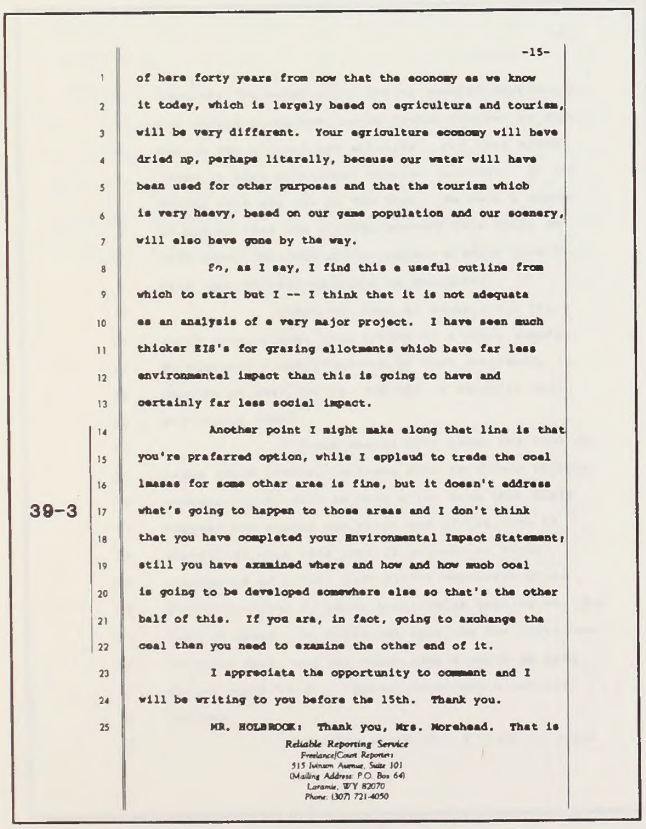

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of here forty years from now that the economy as we know it today, which is largely based on agriculture and tourism, will be very different. Your agriculture economy will have dried up, perhaps literally, because our water will have been used for other purposes and that the tourism which is very heavy, based on our game population and our scenery, will also have gone by the way.

So, as I say, I find this a useful outline from which to start but I -- I think that it is not adequate as an analysis of a very major project. I have seen much thicker EIS's for grazing allotments which have far less environmental impact than this is going to have and certainly far less social impact.

Another point I might make along that line is that you're prefarred option, while I applaud to trade the coal leases for some other area is fine, but it doesn't address what's going to happen to those areas and I don't think that you have completed your Environmental Impact Statement; still you have examined where and how and how much coal is going to be developed somewhere else so that's the other half of this. If you are, in fact, going to exchange the coal then you need to examine the other end of it. 39-3

I appreciate the opportunity to comment and I will be writing to you before the 15th. Thank you.

MR. HOLBROOK: Thank you, Mrs. Morehead. That is

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RESPONSES TO PUBLIC HEARING COMMENTS, TRANSCRIPT NUMBER 39

39-1 The Hydrology section has been expanded. In some cases specific impacts are not identified because of a lack of data. In these instances the applicant will have to provide additional information to the state of Wyoming during the permitting process.

39-2 Thank you, impacts on agriculture are discussed in the final EIS.

39-3 See response to Natural Resource Defense Council, number 23.

the last registered speaker of the evening. Are there any members of the audience who wish to introduce testimony for the record this evening?

(No reply.)

MR. HOLBROOK: If there are no further speakers, I declare this public hearing closed as of 7:20 P.M. Thank you very much for attending.

MR. KOLKMAN: 7:40.

MR. HOLBROOK: Excuse me, 7:40. Thank you again.

(Thereupon, the proceedings concluded at 7:40 P.M. on October 20, 1982.)

* * *

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wildlife and economic impacts would be significant.

Although BLM is obligated to process the PRLA's to determine if the applicant is entitled to a coal lease on the area, the no-development alternative is the BLM's preferred alternative.

If it is determined that the applicant can mine this coal at a profit on all or part of these eight PRLA's, the BLM will attempt to negotiate an exchange according to the process I identified earlier.

It is essential that you, the public, understand that there is no guarantee the exchange would take place. If it is determined that the applicant is entitled to a coal lease and the applicant chooses not to exchange, the mine could be developed as long as it would comply with the laws and regulations of the states of Wyoming and Colorado and local county ordinances.

Again, if you have any questions regarding any of the information I just presented, I will be available for answers immediately after the hearing. Thank you.

MR. KARBS: I will now recognize the first registered speaker, Linda Fleming. Again, state your name, place of residence, and who you are

affiliated with.

MS. FLEMING: My name is Linda Fleming. I am mayor of the town of Bagga, and I'd like to reepond on behalf of Bagga to the draft Savery Coal Environmental Impact Statement, and in particular to the aocioeconomic aection, Tablee 3 and 5.

If the data ia correct--I'll give you a chance to find the pages--about what?--21, 23--if the data ia correct on the direct mine employment, particularly in Table 5, for the four million tona and the seven million tona, indeed the town of Baggs would have to concur with the draft environmental statement. However, they would aak that documentation be made that there would be the 1,000 or 1800 direct employeea in the mine.

39-4

Aa I stated previously, this number of people would certainly impact Bagge. In several placee in the document, it refers to the Savery area as receiving the major impact; however, the town of Baggs feels that it would be greatly impacted, and probably that ia documented throughout that that town--or the town of Baggs--would have the initial impact.

On page 18 there ia a minor change,

probably; it makes reference to ganeral houaing, in the aecond paragraph, being rather limited in Bagge due to the oil and gas activity. And thie month there ia eome additional houeing in Bagge. In two monthe this may not be the caae. We have a number of placee that are already annexed into town; we have areas that are empty apaces--trailer spaces. Thie type of housing would be available.

Today the town of Baggs etill has a stick conatruction type houaea at a short supply. So poaaibly a qualification on that statement, it depends on what the gae and oil is doing at that particular time.

I would assume that today the town of Bagge would probably welcome some aecondary incomee. However, to be able to have a tax bsse that would aupport the sewage and water and etreet type of facilitiea that this type of growth--if thoee etatemente of 1,000, 1800 direct employees would be--that'e only 17 yeara away--would greatly tax the town of Baggs. We would not have the tax atructure to build that, snd yet those people would be here, and we would be in a typical boom-town situation, I believe.

When they moved out, I think it would

39-4 Mine employment is based on estimates provided by the applicant and information from other subsurface mines in the Green River/Hams Fork Coal Region.

be a real challenge to the town and the citizens to find some other secondary type income that these people could stay, rather than just leaving empty houses. And there would certainly be that problem to be faced.

Thank you very much.

MR. KARBS: Our next registered speaker is Mr. Steve Adams.

MR. ADAMS: My name is Steve Adams. I'm a farmer here in the valley and also with the Little Snake River Soil Conservation District.

I would like to congratulate the Bureau of Land Management that this is a well-prepared environmental statement. The first time I read it through, I agreed with them 100 percent. Then I read it objectively and decided that Alfred Hitchcock might buy this. It seems to be rather a horror story with no end, so we could make a movie out of it.

Seems like any environmental statement puts any user of federal land in an adversary position. This impact statement seems to point out all of the bad and nothing good in the mining industry.

When I look around the crowd here, I

see some that came into the valley from the energy impact, and I know they're interested; but I would be a procrastinator if I said that I was against mining coal in the Little Snake River Valley. My grandfather came into the country as a miner. And a lot of the other people that are here in the valley, every time you pick up the newspaper and read the old-time stories, why, they were miners at the Royal Flush or the mine up here at Battle Lake; then they came down and settled in the valley.

The wildlife issues that are brought out in here, we have documentation for those ranchers on the Savery now that 50 percent of the wildlife that they have listed here is in trespass. And they use this in order to get wildlife damage because it's written down.

The Wildlife issue stopped the Savery and Pothook Dam, and it's kind of interesting to me to see someone besides agriculture looking at some of these same issues.

39-5 The energy development on the desert, which I've been out through every day for the last eight to ten years, there was a lot of concern over the antelope. This energy development seems to have enhanced the antelope. Anyone that wants to ride

39-5 The draft EIS does not mention any significant adverse impacts to antelope, but it does address significant impacts to other wildlife. Crucial winter range is the limiting factor for our big game species. Land use change (commerical and residential expansion) will have the most significant adverse impact upon wildlife populations, especially when it occurs on crucial winter range.

through that country can see that it is.

So I question these impacts, because I heard the moderator up here said maybe. And so I think that we're going to have to take a long, hard look at this. 39-5

I had a question that maybe will be answered after the meeting--if the tons of coal or production were presented by the mining company, or if this was Bureau of Land Management figures, or just how they came by these figures, because if we were--I saw in the paper just the other day over at Hanna, they had a mine over there that's producing over a million tons and 300 people are employed. This sort of impact probably wouldn't hurt the valley, and if we're too concerned, why, we can get Harry--he'll mine it for us. He mined coal here for several years. 39-6

The other thing that I'd like to point out to the people here is that in my family, my grandfather--there was six children and only three of them managed to stay in the valley, and they were all agricultural people. From those there were nine grandchildren and only two managed to stay in the valley; one of them is employed by the state highway and the other one's a dummy, he's in agriculture.

But as I look around, I see one of my neighbors here, and because of energy impact, he's got three boys that are still here in the valley and are all working. One of our other friend's got three boys and three girls; they're all here in the valley and working because of the energy impact.

So I think when we look at this, we want to look at both the good and the bad; maybe like I said, agree with the statement that we can't stand this impact, we don't want it. I mean, we were here first--that's like my grandkids say when they get on my lap.

On the other hand, let's take a long, hard look at this and see what we're looking at for the valley. And you know, if we put--scaled this down to two million tons, we'd be looking at 140, 150 years of industry here in the valley; and of course, if we scale it down and let Mike mine it, we'll be here forever.

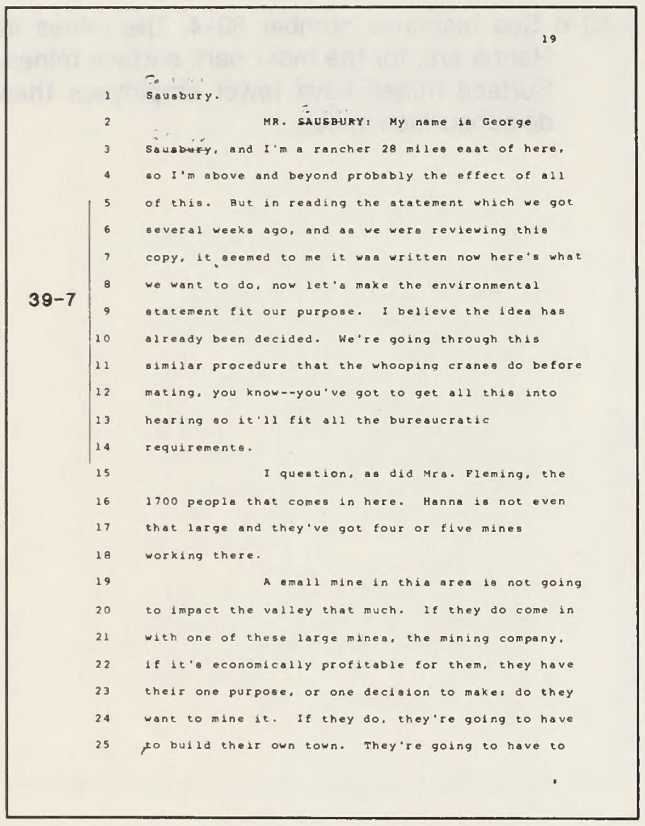
That's about all that I have to say about this statement. Thank you.

MR. KARBS: Next speaker is Mr. John Thomas.

MR. THOMAS: I'd like to decline.

MR. KARBS: Next speaker is Mr. George

39-6 See response number 39-4. The mines in Hanna are, for the most part, surface mines. Surface mines have fewer employees than do subsurface mines.



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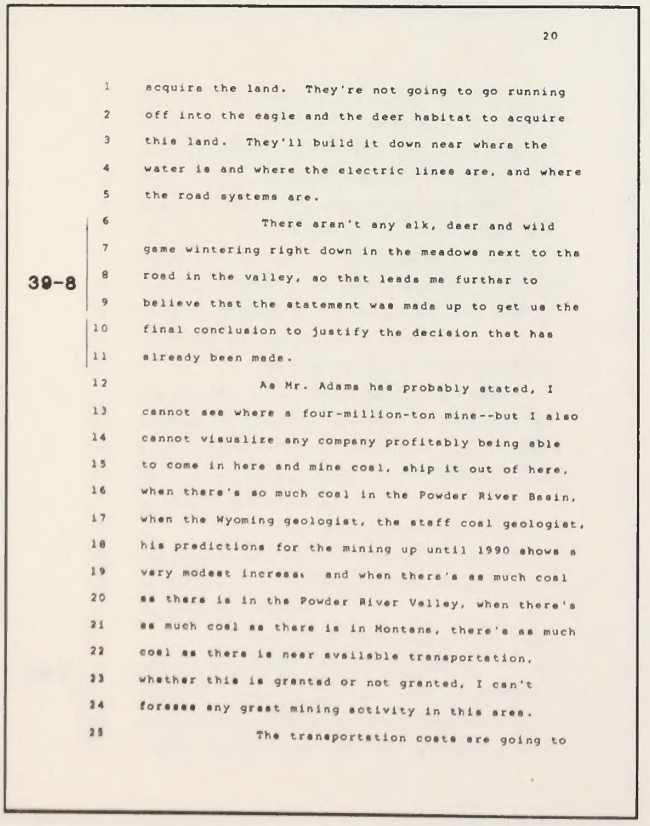
Sausbury.

MR. SAUSBURY: My name is George Sausbury, and I'm a rancher 28 miles east of here, so I'm above and beyond probably the effect of all of this. But in reading the statement which we got several weeks ago, and as we were reviewing this copy, it seemed to me it was written now here's what we want to do, now let's make the environmental statement fit our purpose. I believe the idea has already been decided. We're going through this similar procedure that the whooping cranes do before mating, you know--you've got to get all this into hearing so it'll fit all the bureaucratic requirements.

I question, as did Mrs. Fleming, the 1700 people that comes in here. Hanna is not even that large and they've got four or five mines working there.

A small mine in this area is not going to impact the valley that much. If they do come in with one of these large mines, the mining company, if it's economically profitable for them, they have their one purpose, or one decision to make: do they want to mine it. If they do, they're going to have to build their own town. They're going to have to

39-7



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acquire the land. They're not going to go running off into the eagle and the deer habitat to acquire this land. They'll build it down near where the water is and where the electric lines are, and where the road systems are.

There aren't any elk, deer and wild game wintering right down in the meadows next to the road in the valley, so that leads me further to believe that the statement was made up to get us the final conclusion to justify the decision that has already been made.

As Mr. Adams has probably stated, I cannot see where a four-million-ton mine--but I also cannot visualize any company profitably being able to come in here and mine coal, ship it out of here, when there's so much coal in the Powder River Basin, when the Wyoming geologist, the staff coal geologist, his predictions for the mining up until 1990 shows a very modest increase, and when there's as much coal as there is in the Powder River Valley, when there's as much coal as there is in Montana, there's as much coal as there is near available transportation, whether this is granted or not granted, I can't foresee any great mining activity in this area.

The transportation costs are going to

39-8

39-7 The preferred alternative was selected in the recent land-use plan in the Rawlins District (May 1982). Our land-use planning process included numerous public meetings and hearings, however, no decision regarding lease issuance has been made. That decision will be made after the applicant submits his final showing. Whether or not an exchange occurs depends on three events: (1) the final showing demonstrates lease entitlement, (2) the applicant seeks to negotiate for an exchange, and (3) an exchange is consumated which is in the best interests of the applicant and the U.S.

39-8 Wildlife data and observations indicate that mule deer winter throughout the valley. The elk winter primarily to the east, north, and northwest of Slater (refer to Maps 8 and 9 in the draft EIS). Wildlife issues were not the single issue in reaching the BLM preferred action. Socioeconomic impacts are the most significant issue and wildlife values suffer because of these impacts.

dictate the economy or the economics of the profitability of mining this coal. But if the decision has already been made, I don't think it's going to affect the valley particularly. If the decision is made the other way, I don't think it's going to affect the valley for 40, 50 years anyway.

But those are my thoughts.

MR. KARBS: The next speaker is Katherine Morehead.

MS. MOREHEAD: Thank you. I do have only a draft of my commente tonight, but I will be mailing you a copy in the next day or two.

I appreciate this opportunity to comment on the draft environmental impact statement for the Savery project preference right coal lease applications.

I would like to make several pointe this evening. Two questions on basic assumptions the bureau has made in preparing this draft EIS while others deal with the draft in various of its details.

39-9

The first aseumption that I question is that Gulf Oil or its predecessor company, Kemmerer Coal Company, should have ever received prospecting permits for the area under the terms of

the PRLA procees. One of the references cited in the draft EIS is a 1910 geological survey

39-9

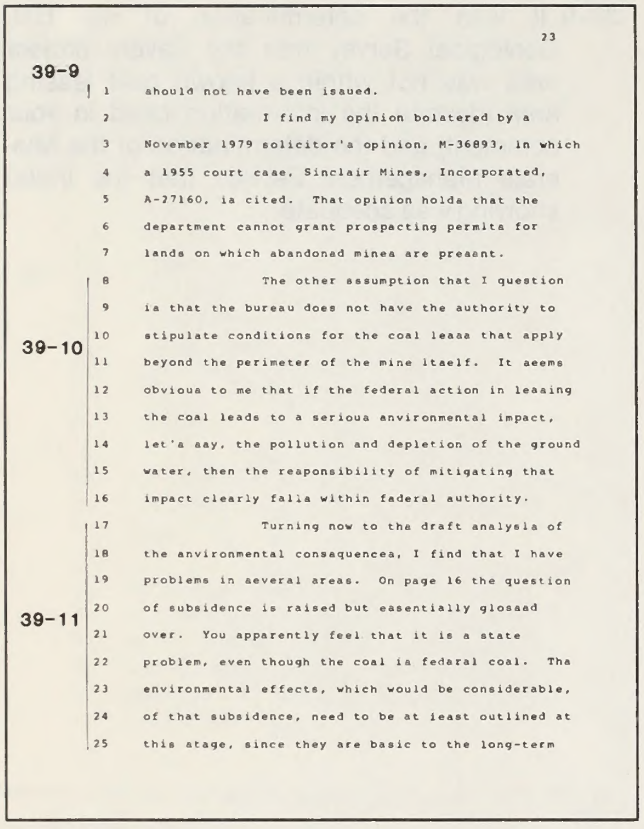
publication entitled "The eastern part of the Little Snake River coal field" by Ball and Stebinger. That publication analyzee in considerable detail the coal in the Savery area. That information reveals a good deal of knowledge about the coal resource as early ae 1908. At least four mines were operating commercially at that time within what is now shown in the draft EIS ae the recoverable coal resource area.

Several other prospecting pointe were analyzed by the geological survey in that study and the coal-bearing formations in the area are discussed.

I wae interested in one sentence from that analysis. In the section entitled "Future Development," the authors eay, quote, the rapidity with which this field will be developed depends almost entirely on four factors: market, transportation facilities, timber supply and water supply.

Obviously, this was not an unknown coal resource eixty years later when the proepecting permite were iesued. And in my opinion, the permits

39-9 It was the determination of the U.S. Geological Survey that the Savery project area was not within a known coal leasing area (despite the information cited in your comment) and the determination of the Minerals Management Service that the initial showing was adequate.



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39-9

should not have been issued.

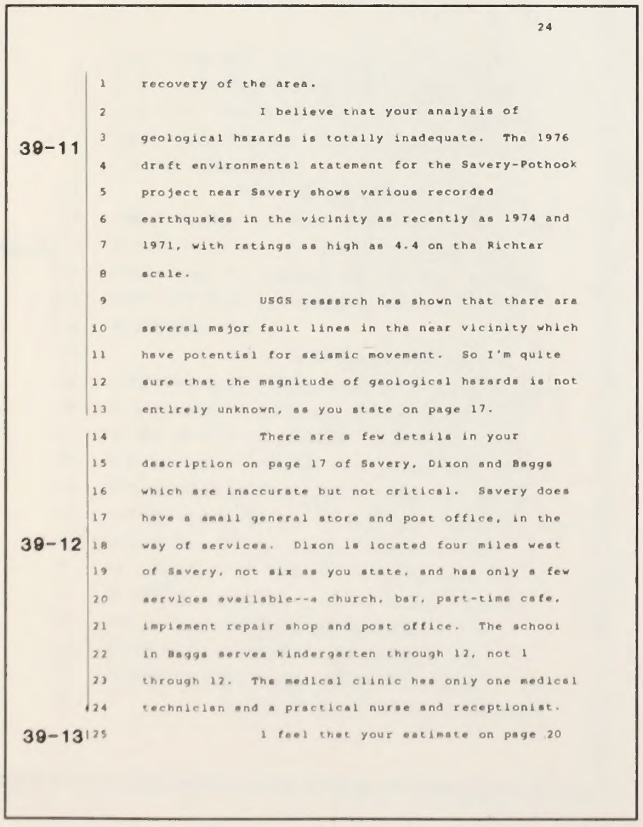
I find my opinion bolstered by a November 1979 solicitor's opinion, M-36893, in which a 1955 court case, Sinclair Mines, Incorporated, A-27160, is cited. That opinion holds that the department cannot grant prospecting permits for lands on which abandoned mines are present.

39-10

The other assumption that I question is that the bureau does not have the authority to stipulate conditions for the coal lease that apply beyond the perimeter of the mine itself. It seems obvious to me that if the federal action in leasing the coal leads to a serious environmental impact, let's say, the pollution and depletion of the ground water, then the responsibility of mitigating that impact clearly falls within federal authority.

39-11

Turning now to the draft analysis of the environmental consequences, I find that I have problems in several areas. On page 16 the question of subsidence is raised but essentially glossed over. You apparently feel that it is a state problem, even though the coal is federal coal. The environmental effects, which would be considerable, of that subsidence, need to be at least outlined at this stage, since they are basic to the long-term



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recovery of the area.

39-11

I believe that your analysis of geological hazards is totally inadequate. The 1976 draft environmental statement for the Savery-Pothook project near Savery shows various recorded earthquakes in the vicinity as recently as 1974 and 1971, with ratings as high as 4.4 on the Richter scale.

USGS research has shown that there are several major fault lines in the near vicinity which have potential for seismic movement. So I'm quite sure that the magnitude of geological hazards is not entirely unknown, as you state on page 17.

39-12

There are a few details in your description on page 17 of Savery, Dixon and Baggs which are inaccurate but not critical. Savery does have a small general store and post office, in the way of services. Dixon is located four miles west of Savery, not six as you state, and has only a few services available--a church, bar, part-time cafe, implement repair shop and post office. The school in Baggs serves kindergarten through 12, not 1 through 12. The medical clinic has only one medical technician and a practical nurse and receptionist.

39-13

I feel that your estimate on page 20

39-10 We regret our error. Note the changes in the final EIS.

39-11 The Subsidence and Geologic Hazard sections have been expanded in the final EIS.

39-12 Thank you, these changes have been noted in the final EIS.

39-13 We have no method of determining whether new housing would be built close to an existing town or, as you point out, in ranchettes scattered throughout the valley. This EIS points out both issues: (1) that housing would be built on the ranchette concept, therefore affecting the 21,000 potentially developable acres of private land in various patterns; and (2) housing would follow a more urban pattern, for which, in this case, the 0.10 acres per person, would be adequate. This standard is established in an Environmental Projection Agency Publication entitled "Managing Growth in the Small Community."

39-13

of the acreage required for housing the population resulting from mine development is very conservative in allowing only one-tenth acre per person: you are apparently assuming most people will live in town, yet on page 18 you point out that in Carbon County, a platted subdivision must be at least five acres.

I believe that many of the newcomers would in fact opt for ranchettes rather than live in town. This may be especially true as ranchers and farmers find themselves in increasingly dire economic straits, at least partly due to pressure from increased population in the area and loss of water to the mine and other municipal and industrial developments.

39-14

In fact, one of the shortcomings of the draft EIS, in my opinion, is the failure to analyze in any detail the effect the mine and its population impacts will have on the existing economy. It should be a simple enough matter to analyze the number of acres which would be lost to agriculture and the number of farm and ranch families which would be affected.

Also, little mention is made of the impact on our existing tourism and recreation resource, which has been a traditional and stable

39-14

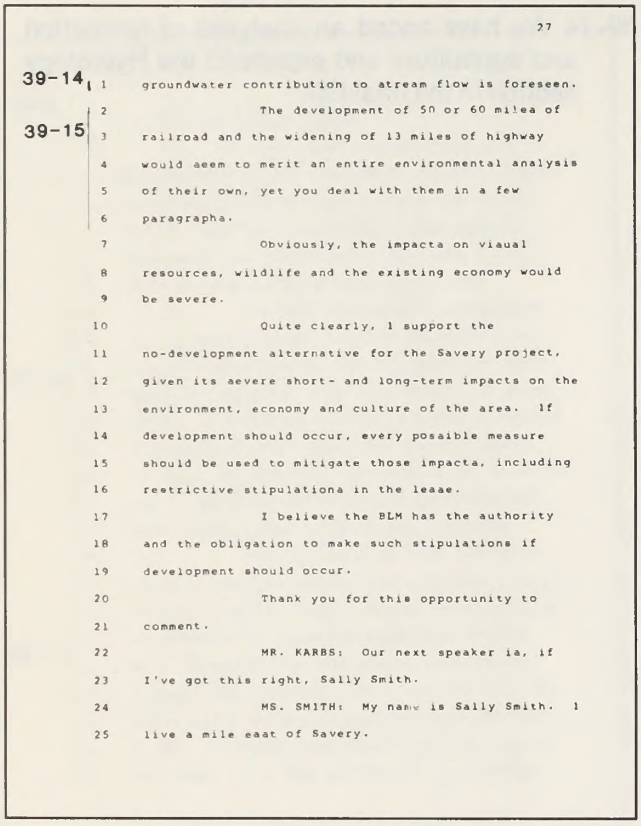
part of our economy. I believe that that resource will be essentially lost, especially in regards to hunting and fishing.

I'm particularly concerned with your analysis of the environmental consequences of the mine on water resources. I believe that the depletion and/or pollution of the groundwater in the Savery area is an important concern and one that should be stipulated should the company receive a lease.

There are probably forty or more groundwater wells in the Savery area which supply domestic uses and livestock. If, as your draft suggests, more than 1,000 people move into the Savery area, a stable water suppy becomes even more critical. I see no reason why the company cannot be required to furnish a supply of potable water to those affected.

The reduction of stream flows and the mention of purchase of water rights as mitigation measures concerns me for the implication it has of the permanent loss of the agricultural economy in the area. It also appears that there's a conflict between the statements made on page 37 and those on page 38 where you allege that no reduction in

39-14 We have added an analyses of recreation and agriculture and expanded the Hydrology section in the final EIS.



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groundwater contribution to stream flow is foreseen.

The development of 50 or 60 miles of railroad and the widening of 13 miles of highway would seem to merit an entire environmental analysis of their own, yet you deal with them in a few paragraphs.

Obviously, the impacts on visual resources, wildlife and the existing economy would be severe.

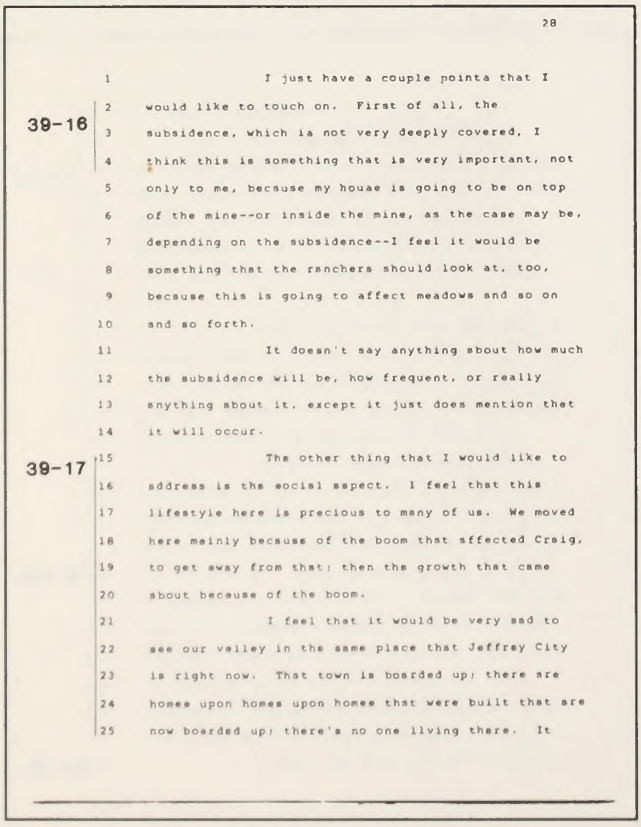
Quite clearly, I support the no-development alternative for the Savery project, given its severe short- and long-term impacts on the environment, economy and culture of the area. If development should occur, every possible measure should be used to mitigate those impacts, including restrictive stipulations in the lease.

I believe the BLM has the authority and the obligation to make such stipulations if development should occur.

Thank you for this opportunity to comment.

MR. KARBS: Our next speaker is, if I've got this right, Sally Smith.

MS. SMITH: My name is Sally Smith. I live a mile east of Savery.



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I just have a couple points that I would like to touch on. First of all, the subsidence, which is not very deeply covered, I think this is something that is very important, not only to me, because my house is going to be on top of the mine--or inside the mine, as the case may be, depending on the subsidence--I feel it would be something that the ranchers should look at, too, because this is going to affect meadows and so on and so forth.

It doesn't say anything about how much the subsidence will be, how frequent, or really anything about it, except it just does mention that it will occur.

The other thing that I would like to address is the social aspect. I feel that this lifestyle here is precious to many of us. We moved here mainly because of the boom that affected Craig, to get away from that; then the growth that came about because of the boom.

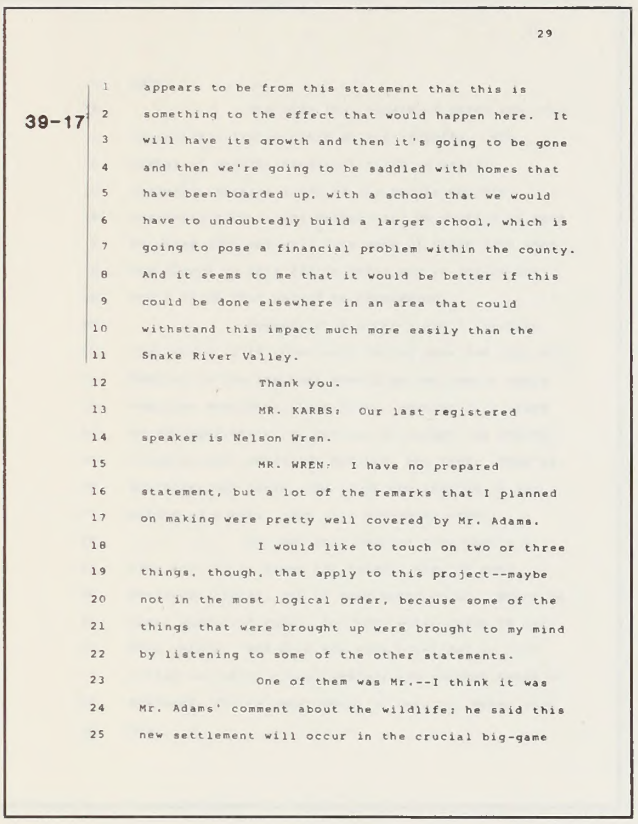
I feel that it would be very sad to see our valley in the same place that Jeffrey City is right now. That town is boarded up; there are homes upon homes upon homes that were built that are now boarded up; there's no one living there. It

39-14 See response number 15-14.

39-15 See response number 15-14.

39-16 The subsidence section has been expanded in the final EIS.

39-17 A Social Conditions section has been added to the final EIS.



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appears to be from this statement that this is something to the effect that would happen here. It will have its growth and then it's going to be gone and then we're going to be saddled with homes that have been boarded up, with a school that we would have to undoubtedly build a larger school, which is going to pose a financial problem within the county. And it seems to me that it would be better if this could be done elsewhere in an area that could withstand this impact much more easily than the Snake River Valley.

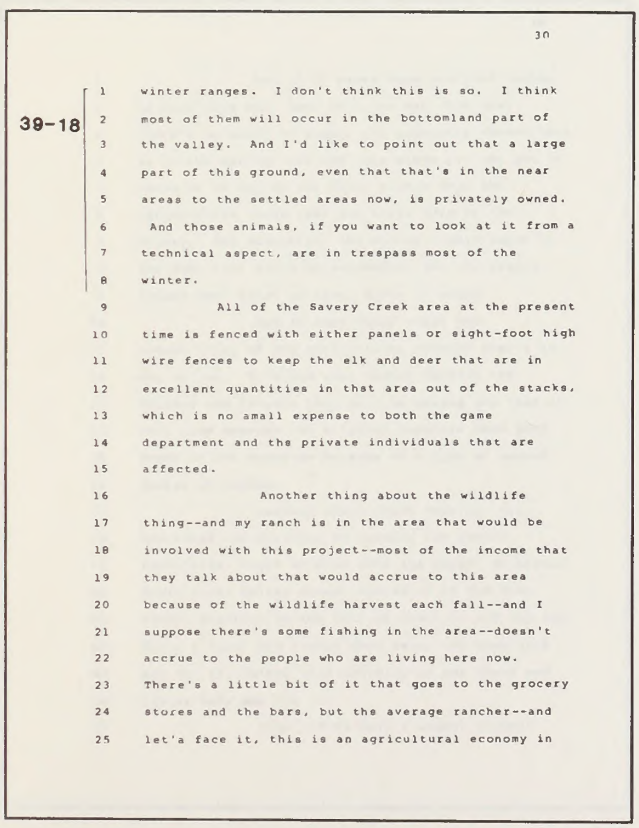
Thank you.

MR. KARBS: Our last registered speaker is Nelson Wren.

MR. WREN: I have no prepared statement, but a lot of the remarks that I planned on making were pretty well covered by Mr. Adams.

I would like to touch on two or three things, though, that apply to this project--maybe not in the most logical order, because some of the things that were brought up were brought to my mind by listening to some of the other statements.

One of them was Mr.--I think it was Mr. Adams' comment about the wildlife; he said this new settlement will occur in the crucial big-game



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39-18

winter ranges. I don't think this is so. I think most of them will occur in the bottomland part of the valley. And I'd like to point out that a large part of this ground, even that that's in the near areas to the settled areas now, is privately owned. And those animals, if you want to look at it from a technical aspect, are in trespass most of the winter.

All of the Savery Creek area at the present time is fenced with either panels or eight-foot high wire fences to keep the elk and deer that are in excellent quantities in that area out of the stacks, which is no small expense to both the game department and the private individuals that are affected.

Another thing about the wildlife thing--and my ranch is in the area that would be involved with this project--most of the income that they talk about that would accrue to this area because of the wildlife harvest each fall--and I suppose there's some fishing in the area--doesn't accrue to the people who are living here now. There's a little bit of it that goes to the grocery stores and the bars, but the average rancher--and let's face it, this is an agricultural economy in

39-18 The bottomload part of the valley is crucial winter range for mule deer. Elk crucial winter range exists to the east, north, and northwest of Slater. The areas most likely to be settled occur on private lands as identified in the draft EIS.

this whole valley: in fact, it's about the only economy that's been here any length of time.

We've seen the uranium development come and go; we've seen the oil and gas exploration come and go a couples times; and so we've had some minor booms and busts in the past, but the agricultural economy is the one that stayed.

And like Mrs. Smith and my sister, Mrs. Morehead, I rather enjoy the way of life here, too. If it wasn't for that, I probably wouldn't be here, because I've got other things I could do where I could make a heck of a lot more money. But I kind of like where I'm at.

But I don't believe we should depend upon focusing the entire future of this valley on a one-occupation economy. The agricultural economy, more years than not, shows a negative return on its investment, and I imagine that's going to happen for the next probably 20 or 30 years until finally the world population catches up with the food supply. At that time I think agriculture will probably be able to hold its own, if there's enough of us left in the business to take care of the needed demand.

What I fear is that if we don't develop some kind of a secondary economy in this

valley and other places in Wyoming, we may end up with the people who are on the land now being forced into a sale situation where the only people we have left in this valley are the absentee landlords that come and spend a couple months in the summer and you don't see them again until the next year. They do all their banking in New York City or Los Angeles, San Francisco. They buy all their supplies in Denver or Salt Lake, and the local businesses that are here in the valley now don't mean very much to that type of people.

If we had a well-organized, thought-out development for coal or some other industry in this valley, there are a number of the people who are now living here who have been here for two or three generations that possibly could salvage their ranching operations by virtue of having a second chance at an income. They might not necessarily have to work in the mine itself, but in the construction that takes place prior to the beginning of the mining operation, and the subsidiary businesses that would spring up to support the mining operation and the influx of people would certainly supply employment, secondary income for a lot of the people who are presently

here.

And with that regard, I think you have to consider the concerna of Mrs. Fleming. The number of people involved I think is groaaly inflated, because a lot of the people who are presently here in the valley will be working at some of these joba and will take some of theae jobs that are liated in this EIS as being new to employment. And I think that should be considered.

Someplace in here--I can't remember juat where it is--they were aaying that the city of Rawlins ia the one that ahould be--or that's where the coal should be mined firat, because it's cloae to tranaportation, et cetera, et cetera, et cetera. l really feel aorry for Rawlins, you know. They've had booms and busts, and right now they're in the bottom of a buat, juat like everybody elae.

But the fact remaina that that's a city that if it grows any bigger, they've got problems already, one of them being water. Where ia their source of supply for that water going to be? Thia valley. And once you take water out of thia valley to aupply a municipality and another basin of drainage, you're never going to see that water back here.

And if 50 years from now they decide to mine this coal down here, we may find that there'a no water to supply the necessary wherewithal to do the mining, and the only place you can get it would be to buy up the water rights from the agricultural lands that are still here in the valley. And naturally, the oldest righta would be the onea that would be purchaaed, for the simple reaaon that first in time, first in right.

And so thst would lower the productivity of the agricultural economy that's in the valley. It would alao highly benefit the doctors and lawyers that will be owning the land at that time because the original ranchers have gone broke in the meantime because of a lack of second source of income.

Another thing about Rawlins, they mentioned the building of schoola and public facilitiea; might mention that the Baggs, or Little Snake River Valley school syatem is in the same school district as the city of Rawlins, and why not build a nice, new school down here, let them help psy for it, rather than building it out there and let us help pay for it.

Also, if we have a bigger atudent

population, we might be able to afford some of the nice things we'd like to have, like swimming pools and bigger art classes, et ceters, et ceters.

Getting back to this water problem under the section dealing with the environmental consequences, I think that basically it's like Mr. ~~Saxsbury~~ and some of the other speakers stated, you've started out with a premise of what you wanted to happen and wrote the EIS to make it conform. No place in here do I find any mention that the Wyoming Water Development Commission was consulted with regard to the situation in this valley as it pertains to water.

It did state they referred to a document which the commission created with regard to stage two and stage three of the Cheyenne--well, it's called now the Little Snake River Water Management Project--but there was no mention in the article or in the EIS itself as to the impact of that project.

The primary purpose of that project is to obtain water for the municipalities in the Platte River Valley, which also includes Rawlins, by the way. And it makes very little sense to me to take all the water out of this valley to supply impact in

the Platte River Valley, i.e., Rawlins, Hanna, possibly even Medicine Bow, when it could be developed right here so that it would still be here after the project is gone.

We know that once it leaves this valley, it'll never come back. And this is one of the things the commission is wrestling with.

The other thing is in regards to groundwater. I, too, am quite concerned over the possibility of our domestic wells and livestock wells being affected. However, there is an alternative to that also. If we are able to develop the Little Snake River Management Project in a manner that we would like to see it developed, there's a possibility of developing a valley-wide municipal water system which would start at the upper end of the Savery Creek Valley and would supply all the users from the ranchers all the way down below Baggs. And that would probably give us better water than a lot of us have now. I know I've drilled several wells trying to get water on my ranch right now. Mrs. Smith has, and I'm sure there are several others that have.

This is one of the aspects of planning we're trying to do at a state level to solve some of

the problems we already have.

Another one is this business of the groundwater withdrawal through the particularly east portal of the mine. It's going to be a real problem. They're going to have to pump constantly in order to do it. And this EIS states that that water will probably injected into the surface runoff of Savery Creek.

I submit that that's not necessarily so, and it also affects the transportation of the coal. Anybody ever heard of a coal slurry pipeline? We've got the water there. Part of it is coming from the groundwater; part of it would be supplied from Kemmerer Coal Company's own filing in the Three Forks Reservoir. It could be put in a pipeline at Savery, sent out to their J.O. ground that they have out on the Muddy. If they want to build a power plant there, they've got part of the water there.

A coal slurry pipeline takes about one-eighth the coal that is necessary for a steam generation plant to supply a coal slurry pipeline. So we would have to come up with some more water.

The fact remains that you could use part of that underground water that was ejected from the mine to supply the coal slurry pipeline. This

would also do away with the idea of having to supply a rail spur all the way down here with its impact, not only visually, but the right-of-way that's necessary for that.

Chances are there's going to be a water pipeline built under the Little Snake River Water Management Project that will follow very nearly the same corridor that's necessary if we build a coal slurry pipeline to somewhere in the (undecipherable) junction.

There are some other things I've forgotten with regard to the water effects. I'll think of them after I sit down, I suppose.

Oh. Another thing is on the highways and the traffic that's on those highways within the valley. I think any of you who have driven from Baggs to Dixon are aware that the highway we now have is probably, by state standards, is substandard at the present time, and I think it's time that it was rebuilt to bring it up to standards. And maybe this would be a good opportunity to do it. There, again, supplying labor for a short period of time, at least for some of the local citizens of the valley.

In closing, I'd just like to state

that there are a lot of things in this EIS that I agree with. There are a lot of them I obviously don't agree with. And I think that it's incumbent upon the Bureau of Land Management in preparing one of these EIS's that they consider some of the positive effects of the impact as well as all the negative ones. And I think that's the main thing I'd like to leave

MR. KARBS: I'd like to now ask if there is anyone in the audience who didn't have a chance to register to testify who would like to testify at this point. If there is, I'll recognize you out of the audience.

No takers?

If there are no further speakers, I would first of all like to remind everybody that there will be another hearing of this type in Rawlins on Wednesday night, November 10, and that we will be entertaining and accepting any written comments through November 15.

Do we have any speakers at all?

Okay.

Therefore, I would like to declare this public hearing closed as of 8 p.m.

WHEREUPON, the within proceedings were

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